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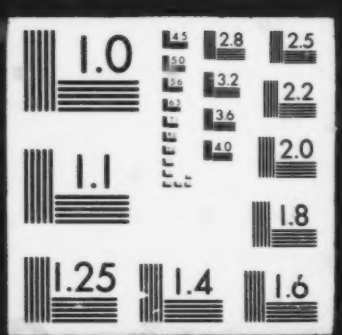

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ANNUAL REVIEW OF LITERATURE ON RADIOACTIVITY STUDIES OF AIR, WATER AND WASTES 1956.

Conrad P. Straub, et al

Robert A. Taft Sanitary Engineering Center
Cincinnati, Ohio

March 1957

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ANNUAL REVIEW OF LITERATURE
ON
RADIOACTIVITY STUDIES
OF
AIR, WATER AND WASTES

Edited by

CONRAD P. STRAUB, Ph. D.

AND

LLOYD R. SETTER, Ph. D.

Prepared in part for the Research Committee

of the

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Foreword

Annual Reviews of Literature pertaining to Radioactivity in Air, Water and Wastes have been prepared by staff members of the Sanitary Engineering Center for the Research Committee of the Federation of Sewage and Industrial Wastes Associations since 1950. The reviews have appeared in the March to May issues of Sewage and Industrial Wastes.

The reviews have included select literature covering the general field of public health with emphasis on water and wastes. Since nuclear energy technology and studies pertaining to it grew by leaps and bounds it became increasingly difficult to cover the entire field of public health interest. In 1956 over 500 articles pertaining to the field were published. Realizing that the scope of the review required reevaluation, the 1956 review was limited to select articles on Radioactive Wastes for inclusion under the Industrial Wastes section of the "Annual Review of Literature." Many references under this topic were merely cited. The review excluded some 300 articles of public health significance.

In view of the foregoing, the review has been modified to obtain more complete coverage in the form of an alphabetically arranged bibliography classified by code in the reference list and reproduced in limited quantity as a sanitary engineering publication.

RADIOACTIVE WASTES

Waste Sources

The International Conference on the Peaceful Applications of Atomic Energy at Geneva, Switzerland, provided a considerable amount of declassified information on the processing of spent nuclear fuel. Additional material was presented at two conferences held in December 1955, namely: A Seminar on the Sanitary Engineering Aspects of the Atomic Energy Industry sponsored by the AEC and the Public Health Service, held at the Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio, December 6-9; and the First Nuclear Energy Congress sponsored by the Engineers Joint Council, held in Cleveland, Ohio, December 12-16, 1955. Since the functions of chemical processing are to separate the fissile and fertile fuels from the fission products, these operations are the major source of radioactive wastes. With the expansion of a nuclear power industry, it is felt that the presently accepted method of tank storage for such wastes will not be entirely satisfactory. Various schemes have been suggested for handling wastes resulting from a nuclear power industry (34)(91)(16)(35)(5)(43).

Lawroski (53) has surveyed the separation processes employed and includes precipitation, ion exchange, fractional distillation, pyrometallurgy and solvent extraction processes, and Nicholls (63) has given criteria for selection of separation processes. Detailed discussions of each of these processes have been presented: Solvent extraction (18)(19)(29)(30)(31)(36)(38)(40)(66)(88); precipitation (29); ion exchange (29)(14); fractional distillation (48); high temperature processing (24)(62)(89), and pyroprocessing (28)(67). Rodger (71) has discussed the trends in separation processes and their effects on waste handling.

Fixation of Wastes and Firing

The greatest amount of work on the "permanent" fixation of radioactive materials to clay which is then converted to a ceramic by firing has been carried out by Hatch and his associates (42). Their recent investigations have extended this method to the treatment of high level wastes. Because of the large amount of nitric acid or aluminum nitrate in the waste solutions, the wastes must be pretreated to avoid saturation of the montmorillonite clay with these cations. Permselective membranes were tried for this, but more recently, kiln drying of the aluminum nitrate fission products waste to form aluminum oxide has been developed. The aluminum oxide plus fission products is leached and the leachate containing a fraction of the fission products is passed through montmorillonite clay. The clay columns are fired at temperatures up to 1000°C. to fix the activity permanently, and then disposed of by storage underground or other suitable means.

Amphlett (2)(3) investigated the use of natural silicate materials and soils as bases for adsorbing radioactive wastes. The mixture is then fired at high temperatures to fix the activity in an unleachable state in glass. The process is applied to slurries and solid wastes as well as solutions. Experimental results on required temperatures were given by Amphlett and Warren (4) and by Johnson et al (49). It was concluded (49) that liquid wastes containing between 100 and 1000 curies per gallon may be disposed in insulated concrete lined earth pits and will self-heat to temperatures adequate to become fixed in clay-flux mixtures. The mixtures used in these experiments were developed by McVay, Hamner, and Haydon (59). They combined Conasauga shale, soda ash, and limestone with a simulated aluminum nitrate-nitric acid waste solution to form a ceramic mass at a temperature as low as 1050°F. Studies at Los Alamos (86) showed that alpha activity in filter cake (4000 c/m/g) and raffinate wastes (120,000 c/m/ml) were fixed for safe disposal when fired with

clay. Beta-gamma wastes at the 400 millicurie level have not been satisfactorily fixed by this method. Additional studies are underway to determine the influence of such factors as clay mixtures, controlled firing, fluxes and glazes, and leaching solutions. Patrick (65) has proposed a method of synthesizing aluminum silicates which eventually metamorphose to feldspatic structures with alkali or alkaline earth oxides. He is applying this method to the removal of strontium and cesium from high level wastes.

Liquid Wastes

Liquid waste sources may be divided into three broad classifications according to activity level: low, intermediate, and high. Low level wastes (92) are those which if decontaminated by a factor of 100 or 1000 would approach permissible limits for human exposure. They range in activity from 10^{-4} to 10^{-3} μc/ml. High level wastes are those requiring shielding and may contain 100 or more curies per liter. Intermediate wastes also require shielding and must be handled with considerable care. They may be (a) high level wastes which have lost a considerable fraction of their activity as a result of decay, (b) residual wastes following recovery or separation of the useful isotopes, (c) wastes from pilot plant operations, or (d) low level wastes that have been concentrated by evaporation or other means.

The presently accepted method for handling high level waste materials is storage. Granquist and Tomlinson (37) point out that with a Purex-type of fuel recovery process and mechanical dejacketing of the fuel elements about 20,000 gallons of highly active waste would be produced by irradiation of natural or slightly enriched uranium to about 2500 megawatt-days per ton. The waste volume would be expected to self-boil perhaps for 50 years. At Hanford non-boiling wastes in 500,000 to 1,000,000 gallon tanks can be stored in reinforced concrete tanks with mild steel liners at a cost of 20 to 25 cents per gallon and self-concentrating wastes may be

stored at a cost of 40 to 50 cents per gallon of tank space. Since this cost amounts to but 0.01 to 0.05 mils per kilowatt of electrical power produced, they state (37) that there is no pressing economic need to develop a better system of waste handling.

Jonke (50) has described a process for converting aqueous nuclear wastes to solid form by injection into a fluidized bed of heated solids, where evaporation and calcination of the waste to oxides is effected. Another calcining operation has been described by Hatch, Regan, Manowitz, and Hittman (43) in which simulated high activity waste streams containing 30 wt % salt were converted to anhydrous free-flowing melts.

At Hanford (74) the waste disposal and control programs include confinement of high level process wastes, cribbing of the low level process wastes, burial of solid wastes, and discharge of reactor coolant water to the Columbia River. It was reported (73) that the concentration of alpha emitters in Columbia River water averaged less than 5×10^{-9} μc/ml at all locations, the average activity density of beta emitters approximated that reported previously, and activity of alpha emitters in mud samples was less than the detection limit of 3×10^{-6} μc/gm. The water quality characteristics of the Columbia River prior to impoundment and the effects of radioactivity released from Hanford on the physical, chemical, and biological characteristics of stream were reported (44) and compared with similar data obtained by the General Electric Company.

In order to permit ground disposal of additional wastes at Hanford, several studies were made to separate strontium and cesium from process waste. Schulz and McKenzie (76) reviewed chemical processes for the removal of strontium from wastes solutions and of cesium from mildly basic solutions, strongly alkaline solutions, and acidic wastes. Rimshaw (70) described the use of co-crystallization with ammonium alum for the recovery of kilocurie amounts of cesium. Strontium, ruthenium, and rare earths were precipitated in kilocurie amounts as hydroxides and carbonates on ferric hydroxide carrier. Experimental evidence indicated the feasibility of using these

precipitation and crystallization methods to decontaminate radioactive wastes high in sodium or aluminum. Specific studies for decontaminating aluminum waste solutions were described by Blanco, Higgins, and Kibbey (10). They utilized a scavenging precipitation and an Al-resin ion exchange technique. Gross beta-gamma decontamination factors of 10^3 (influent over effluent activity) were obtained with 97 to 99 per cent of the aluminum appearing in the eluate. The Cs and Sr decontamination factors were 10^3 to 10^4, respectively. A further development was reported by Higgins and Wyner (46) who decontaminated an $Al(NO_3)_3$-nitric acid radioactive waste. Ninety per cent of the niobium and 95 per cent of the ruthenium and zirconium were removed by a ferric hydroxide-manganese dioxide scavenging precipitation. The aluminum nitrate was converted to a dibasic aluminum nitrate by destructive distillation and dissolved by 12-hour digestion at 160°C. The strontium, cesium, and rare earths were removed by cation exchange in a continuous contactor. The decontaminated waste can be volume-reduced to about 6M aluminum before disposal and then stored cheaply. The fission products can be eluted from the column, concentrated to a small volume of highly radioactive waste, and stored with all necessary precautions.

At Los Alamos (47), a radioactive waste containing Ba^{140}, La^{140}, Sr^{90}, and Y^{90} was passed through a cation exchange resin column. Storage in the column results in the decay of short-lived Ba and La isotopes. Within reasonable limits of raw waste quality, the ion exchanger reduces the Sr^{90} concentration to permissible levels for discharge. The resin column was regenerated on exhaustion and spent regenerant treated by chemical precipitation and vacuum filtration.

Laboratory work on second decontamination cycle wastes using FeS and ferrous ferrocyanide precipitation has been described (54). The best results were obtained with FeS as a precipitant in conjunction with an absorbant. A removal of 97.9% of the activity was possible with the ferrous ferrocyanide method and resulted in a low burial volume compared to the original waste volume. The activity of the final supernatants could be maintained below 300 counts per min. per ml. First cycle

wastes could be decontaminated by repeated FeS scavenging.

Another scheme reported by Glueckauf and Healy (35) for the separation of cesium and strontium involves the following: The fission products are taken to dryness to remove all nitric acid and water, the dry material is roasted for about an hour at 300°C., whereby all the nitrates except those of the alkali and alkaline earth metals are decomposed to oxides. The solid is then leached with warm water which dissolves out the cesium and strontium nitrates, leaving behind all the water insoluble oxides. Usually about 95% of the cesium and 85% of the strontium can be extracted. The roasting temperature is rather critical. The strontium and cesium so separated may be concentrated for separate storage and the residual fission products may be stored for a shorter time in separate facilities.

Krieger, Kahn, and Straub (51) described precipitation studies for the removal of strontium, cesium, zirconium, niobium, yttrium, ruthenium, and cerium from simulated high level aluminum nitrate wastes. The separation of the waste into such components with separate storage of the more hazardous fraction has advantages in that less storage space will have to be provided, less elaborate storage may be provided for the bulk of the wastes, self boiling of the waste will not take place, and there will be no need for special tank cooling facilities.

The induced activity levels reached in cooling waters have been described by Farmer (27) and Lyon and Reynolds (55).

The use of the electrodyalytic method for the treatment of radioactive waste was studied on a laboratory scale by Seal and Pecsok (77). They reported that the method may be used to concentrate extremely dilute ionic constituents. Concentration factors of 100 to 1 were obtained with normal surface waters.

In the case in which the reactor burnup is 5,000 megawatt-days (heat) per ton, the processing volume 1200 gallons per ton, and the allocated cost for waste disposal 2% (or 0.16 mills/kwhr$_e$), the allowable cost of waste disposal was estimated to be 4$ per gallon by Zeitlin (94). The economic future of fission products for radiation power was discussed by Manowitz and Richman (56)

Ocean Disposal

The first studies relating to the possible utilization of the oceans for the disposal of radioactive wastes were conducted in the Irish Sea at Seascale, England by the British. These studies (78)(23)(26)(7)(93) indicated that such disposal was feasible providing continuous monitoring was maintained. Tests made on seaweed, fish, and sea-bed mud over a five-year period have shown no harm to marine or human life from the discharge of these relatively low level liquid wastes.

Wolman and Gorman (91) report that costs for packaging, handling and/or disposal of wastes at sea vary from a low of about $0.30 per pound along the east coast, to $0.80 to $1.00 per pound for waste along the west coast. Approximately 20 to 30 tons per year are disposed along the east coast as compared to about 4 to 5 tons on the west coast. No disposal of high level wastes is practiced at present, but the oceanographic problems associated with disposal of high level wastes was discussed by Renn (68)(69). In describing Brookhaven experience with ocean disposal, Ginnell (32) reports that about 660 drums of waste totalling 600 curies were dumped at a cost of $20 per drum exclusive of overhead. North American Aviation (52) ships its stored wastes to sea at a cost of approximately 71 cents per gallon based upon one hundred 55-gallon drums per dumping. Dumping takes place some 60 miles off the coast of Southern California at a depth greater than 600 fathoms.

Ground Disposal

Before burial of radioactive materials the geology and the hydrology of the particular disposal site must be well understood. The hydrological and geological factors affecting ground disposal at Hanford, Brookhaven, Oak Ridge, Idaho Falls and Savannah were discussed by Brown et al (12), Laguna (20), and Theis (85). Theis (84) also described the general types of formations useful for ground disposal. These include 1) sandy, relatively permeable formations, 2) permeable cavernous formations, 3) jointed or otherwise fractured rocks, 4) relatively impermeable

shales, or 5) deposits of salines - rock salt or gypsum. Thurston (87) points out that many geological principles and methods used in the petroleum industry are applicable to radioactive waste disposal. The preparation of artificial cavities in salt and shale for the storage of hydrocarbons may be adaptable to the shallow underground disposal of a comparable volume of radioactive wastes. Furthermore, the natural porosity of many sedimentary rocks may be suitable as reservoirs for the safe disposal of wastes at great depths.

The reactions of radioisotope solutions with Hanford soils were described by McHenry, Rhodes and Rowe (56) with respect to the effects of concentration, pH, total ion concentration, and the type of soil. A significant increase in Sr adsorption in the presence of phosphate ion is shown to counteract the adverse effect of high salt concentrations. Experimental evidence and theoretical considerations illustrate the very low diffusion rate of strontium. Preliminary investigations were carried out by Kaufman et al (64) on the feasibility of high level radioactive waste disposal by injection into isolated geological formations. Density effects and exchange reactions between the simulated strontium wastes and columns of clay or oil sand were studied. They observed that exchange reactions may retard the advance of radiostrontium concentration fronts to as much as 1/40 that of the liquid fronts.

Ground disposal has been practiced at several sites including Hanford, Oak Ridge, and Savannah. At Hanford (13), approximately 10^9 liters of active wastes containing several hundred thousand curies of fission products have been stored in the ground during the first decade of operation. During three years of operation, approximately 2.7 million gallons of waste containing 35,000 curies of activity were placed in surface pits scooped in the surface Conasauga shale formations at Oak Ridge, Tennessee (73)(90). Clark and Pohl (15) report that 130,000 gallons of wastes are discharged daily into soil at Savannah. With a basin life of 3 years they estimate that the cost of disposal amounts to 0.1 cent per original gallon. The experiences of Chalk River in disposing of its wastes into the ground have been described by

Mawson (57).

The construction of an experimental asphalt-lined pit for testing its practicability for disposal of high level radioactive processing wastes was described (17). Final results indicated losses up to 22 gallon per day which were attributable to non-uniformity in asphalt liner thickness and tamped shale puncture.

Non-Radioactive Wastes

Not all wastes produced by the nuclear energy industry are radioactive. Where acid dissolution of partially spent fuel materials is practiced, large quantities of nitrate wastes will result. Christenson et al (14a) have developed a non-aerated activated sludge process which has a maximum rate of nitrate reduction in the order of 70 ppm per hour. Their feed, based upon a 6-liter feed volume, is 600 ppm methanol, 250 ppm nitrate nitrogen and 10 ppm PO_4. This mixture is reduced in the 8-hour contact time to no nitrogen and about 40 ppm oxygen consumed.

Liquid wastes from the production of hafnium-free zirconium contain 1.8 pounds of ammonia per pound of zirconium produced along with trace amounts of cyanides, thiocyanates, sulfates and chlorides. McDermott (57a) indicates that the process wastes which are most objectionable from the pollution standpoint amount of 10 gallons of concentrated ammoniacal waste per pound of zirconium produced. The waste is held in basins before trucking to a large river for disposal by dilution.

In the uranium and throium refining and reduction operations large quantities of fluoride containing wastes are produced and recovered according to Heatherton (43a). The solid fluorides are disposed by dumping in a pit at a cost of $0.54 per cubic foot. Liquid wastes are released in such a manner that the fluoride content of the stream does not exceed 1.2 pp. (background fluoride level of stream is 0.4 ppm.)

Low Level Activity

During the 1955 continental series of nuclear tests, samples from 20 municipal water treatment plants were examined to determine the extent of removal of fall-out material by large scale treatment plants. Eliassen and Lauderdale (25) have summarized the procedures used and have reported the data obtained in analyzing the Lexington, Kentucky samples. They state 1) that detectable amounts of fall-out occur in water supplies only after rainfall, 2) that increased amounts of turbidity in the water do not result in an increase in per cent reduction in radioactivity, 3) that the reduction in radioactivity appears to decrease with increasing age of the fall-out material, and 4) that small quantities of radioactivity will persist in water supplies, particularly if impounded for considerable periods after detonation of a nuclear weapon.

The Army engineers (8) have a mobile unit which will decontaminate 3,000, 1,500 or 600 gal/hr of suspended or dissolved radioactivity by a factor of 10^3 (99.9% reduction).

Data have been released (11) reporting the results of studies made in 1949 on the uranium content of the sludges at the two sewage treatment plants serving Oak Ridge, Tennessee. The sludge produced at the West plant was reported to contain 25 to 50 ppm of U, and that at the East plant 5 to 10 ppm. At the time of the tests some wastes from the plant areas were discharging to the West plant thus accounting for the higher uranium values.

Single-or two-stage trickling filters (22) operated continuously at organic loadings of 250 pounds BOD per acrefoot day removed about 50% of gross fission product activity from laundry wastes. Increased loadings resulted in lower removal efficiencies. Sludge was produced at a rate of about 0.3 pounds dry solids per pound of BOD removed. The activity level reached in the sludge was a function of the initial activity level. Removals of individual radionuclides was as follows:

Ce, 97.3%; Ru, 79.1%; Sr, 69.4%; I, 86.7%, and Zr-Nb, 79.5%.

Hermann and Gloyna (45) report that oxidation ponds may be designed to concentrate, delay and possibly remove many bothersome radioisotopes that may be in a waste stream, especially when the concentration of radioactivity is near the maximum permissible concentration. Intermittent "slug" batches of radioactive isotopes, if in low-level amounts, are diluted and in many cases removed by the relatively long detention periods utilized in oxidation ponds. More specifically the authors conclude that 1) algal-bacterial populations are more efficient than bacterial suspensions in detaining P^{32} for decay purposes, 2) about 95% or more of the cerium may be removed, 3) about 80% of aged fission products are retained in oxidation pond suspensions or bottom sediments, 4) about 33% of the strontium may be removed, but removal may be enhanced by continuous removal of algal suspended particles, 5) algae are not effective for the removal of iodine and cesium, 6) the contaminated algae and other suspended matter can be effectively removed by vacuum filtration, and 7) oxidation ponds are not feasible for concentrating high level radioactive wastes.

Güchi, Norimitsu and Yaüchiro (39) reported laboratory studies on the uptake of radioactivity by algae from brackish water containing 0.2 uc/l of mixed fission products. A culture of two organisms (Aphanocapso koordensii and Brachionus) effected an overall removal of 1/2 to 2/3 of the activity in 6 days. Radiochemical analysis indicated about one-half of the uptake consisted of rare earth elements and about 15 per cent was strontium and yttrium. After 12 days the settled dead Brachionus had decomposed and released to solution part of the adsorbed activity.

In considering the criteria for waste disposal Straub (62) proposed that these be established on the basis of stream use i.e. water supply, recreation, game fishing, irrigation, industrial use, etc.

Burial - Solid Wastes

Five national burial sites, located at the Hanford Works, Washington; National Reactor Testing Station, Idaho; Los Alamos Scientific Laboratory, New Mexico; Oak Ridge National Laboratory, Tennessee; and Savannah River Project, Georgia, are operated by the Atomic Energy Commission for the disposal of solid wastes(61). The physical factors affecting the desirability of any particular site are topography and geology, surface and ground water hydrology, meteorology, soil conditions, and transportation facilities. From results reported by Morgan (61) the costs of operating such disposal sites ranged from $1.52 to $9.40 per cu yd of material. These costs did not include sample containers, processing and handling at source, etc., but only capital and operating costs at the site, and may be compared with specific costs at given sites. At Oak Ridge the annual burial load amounts to about 5 acres per year at a cost of approximately 3000 cu yds of solid wastes have been disposed of since 1953 from Rocky Flats, Colorado, at a reported cost exclusive of packaging and handling of $21 to $35/cu yd (75).

Experience in the demolition and burial of an alpha contaminated building (48,000 sq ft in area) was described by Meyer (60); the cost of such an operating being 5-fold greater than that of demolishing a non-contaminated building.

Incineration

The results of three experiments (41) involving the burning of combustible materials under widely varying conditions and using greatly different quantities of waste indicates no significant contamination either of the soil or of the air. If incineration of this type is carried on with a frequency dictated by the scope of operation, it should be possible to consume all of the combustible waste materials in this manner, and thereby very significantly reduce the volume and weight of materials for final disposal.

Studies to evaluate the effect of incinerating waste materials containing P^{32}, Sr^{89}, and I^{131} in an institutional incinerator are reported by Geyer et al (33). Their results indicate that of the P^{32} charged into the incinerator, about 12% was retained on the stack wall and 2% was recovered from the stack gas; of the Sr^{89}, 9% was retained on the wall and 1% recovered in the gas; while of the I^{131}, about 11% was deposited on the wall and 80% escaped in the gas. Ash activity was assumed to be the balance of the charge not otherwise accounted for.

The use of a Martin Burn-All Incinerator has been described by Silverman and Dickey (80) for reduction of combustibles contaminated with low level amounts of radioisotopes. Maximum daily load is set at 200 μc for all isotopes except I^{131} which is set at 500 μc. The stack gas effluents had activity levels of 7×10^{-11} uc/ml. Maintenance over a two year period of operation (3400 lbs of assorted combustibles containing 27,100 μc of activity) were handled at a cost of less than 1/month.

Rodgers and Hampson (72) report operating data on the incinerator designed and built at Argonne National Laboratory to handle 100 $feet^3$ of combustibles daily. Overall decontamination factor (ratio of influent feed to effluent gas concentration) was $2 - 3 \times 10^7$. Cost of incineration amounted to \$2.68/ft^3 for 8-hour and \$1.60 ft^3 for 24-hour operation schedules as compared with solid storage costs of \$9.00/ft^3. At present the combustibles are being shipped to Oak Ridge for burial at a cost of \$1.50/ft^3 thus removing the economic justification for incineration.

Gaseous or Airbourne

Air and gas cleaning for nuclear engineering processes was discussed by Silverman (79). The problems associated with the handling, metallurgy, reactions and applications of nuclear energy processes are described along with the cleaning requirements for protection of personnel in these operations. Special emphasis was

given to the aspects of cleaning gases from power reactors. Performance data are included for various devices on radioactive and inert aerosols encountered in mining, feed materials, production, metallurgical reactions, reactor operations, isotope production and handling, and special problems such as incineration of contaminated waste materials. Mention is made of new methods of gas cleaning developed, such as high temperature and corrosion resistant filtration media.

Investigations on the principles of cloth filtration, on the role of electrostatic forces in gas cleaning, and on the resistance and filtration characteristics of filter beds were described by Dennis et al (21). New projects included the rating of several types of roughing filters, evaluation and testing of stain efficiency techniques, and a study of blast damages to and re-entrainment from high efficiency filters.

The results of a laboratory investigation (6) for removing radioactive particulate matter entrained in gas streams indicates that, by the use of steam injection technique, removal efficiencies approaching those obtained with a CWS-6 filter paper and can filters can be realized in a commercial wet impingement plate scrubber operating on a non-radioactive dust suspension approximating actual plant conditions. Operating the scrubber alone proved unsatisfactory. Sonic agglomeration improved efficiency of the wet scrubber. Methods were developed for generating and analyzing both radioactive and non-radioactive air-borne particulate matter and were applied successfully to the evaluation of various filter papers and a pilot plant gas-cleaning system.

Smith (81) describes the extensive experiments carried out at Brookhaven National Laboratory to define dispersion patterns. The quantitative data, though incomplete, suffice to show that an orderly gradation of dispersion conditions exists, and that a generally acceptable prediction of the ground-level concentrations can be achieved during lapse conditions. The qualitative measurements made under inversions indicate that concentrations can be predicted in this case also. The gustiness

classification needs considerable improvement. The most suitable type of field sampling includes a large number of accurate devices operated simultaneously. The importance of time is stressed and from the wide variation observed any field experiments will be a function of time, at least up to periods of one hour.

References

Listed in alphabetical order are a select list of references classified by code letter in the margin. References on radioactive wastes which were used in the text are also numbered. The code letter classification is as follows:

B - Background or Natural Radioactivity
C - Contamination and Decontamination
CD - Civil Defense Aspects
EB - Effects of Radiation, Biological
EP - Effects of Radiation, Physical
F - Fallout or Radioactivity of the Atmosphere
FS - Fallout, Strontium
FW - Fallout from Precipitation (water)
H - Hazards, Nuclear Energy
HS - Health and Safety
LC - Legislation and Control of Nuclear Energy Operations
M - Methods of Analysis
MC - Methods of Analysis, Chemical
MI - Methods of Analysis, Instrumental
MPC - Maximum Permissible Concentration of Isotopes
R - Reactor Studies
T - Tracer Applications of Isotopes
W-1 - Waste Sources
W-2 - Wastes, Fixation on Ceramic Materials
W-3 - Wastes, Liquid and also Non-Radioactive
W-4 - Ocean Disposal
W-5 - Ground Disposal
W-6 - Low Level Activity
W-7 - Gaseous or Airbourne
W-8 - Wastes, Incineration and Burial

W-8 1 Abee, H. H., "Problems in the Burial of Solid Wastes at Oak Ridge National Laboratory." AEC Doc. No. TID-7517 (Part 1a) 223 (1956)

AK. Akpinar, S. and Akpinar, R., "Radioactive Precipitations in Istanbul and Uludag (Turkey)." Rev. Fac. Sci. Univ. Istanbul 20C, 287 (1955); Chem. Abs., 50, 11836b (1956)

AS. Alexander, G. V., Nusbaum, R. E. and MacDonald, N. S., "The Relative Retention of Strontium and Calcium in Bone Tissue." J. Biol. Chem., 218, 911 (1956)

H. Albert, R. E., "Impact of the Atomic Energy on Community Health." Arch. Indust. Health 13, 425 (1956); J.A.P.H.A. 46, 1038 (1956)

F. Aliverti, Giuseppina, "Atomic Tests and Radioactivity of the Air." Geofisica e Meteorologia, Genoa, 3, 4 (1955); Pub. Health Eng. Abs., 36 (11) 13 (1956).

T. Alimarin, I. B., "Application of Radioactive Isotopes in Chemical Analysis." Int. Conf. on Peaceful Uses of Atomic Energy, 15, 60 (1956)

MC. Ames, D. P., et al, "Collected Radiochemical Procedures." AEC Doc No. LA-1721 (Rev.) (Deleted version: ALCD-3674); Nuclear Sci. Abs., 10, 3267 (1956)

W-2 2 Amphlett, C. B., "The Possibility of Self-Fixation of Highly Active Wastes." AEC Doc. No. AERE-C/R-1862 (Feb. 1956); Nuclear Sci. Abs. 10, (15) 4500 (1956)

W-2 3 Amphlett, C. B. and Warren, D. T., "Fixation of Activity in Solid Form by Absorption on Soils. Part 1. Firing and Leaching Tests." AEC Doc. No. AERE-C/R-1686 (June 1956); Nuclear Sci. Abs., 10, (21) 10124 (1956)

W-2 4 Amphlett, C. B. and Warren, D. T., "The Temperature Distribution in a Heated Clay Block and its Application to the Problem of Fission Product Disposal." AEC Doc. No. AERE-C/R-1861 (Feb. 1956); Nuclear Sci. Abs., 10 (15) 4579 (1956)

W-1 9 Anderson, C. R. and Rohrman, C. A., "The Design and Operation of High Level Waste Storage Facilities." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9 640 (1956)

B. Anonsen, S. H., "Radon Measurements in Warehouse and Box Cars Containing High Grade Ore." AEC Doc. No. NYO-5163 (Feb. 11, 1946); Nuclear Sci. Abs., 10, (11) 3413 (1956)

W-7 Anon., "Fourth Atomic Energy Commission Air Cleaning Conference Held at Argonne National Laboratory, November 1955." AEC Doc. No. TID-7513 (Part 1) (1955); Nuclear Sci. Abs. 10, (18A) 7429 (1956)

W-6 Anon., "PWR Preoperational Radiation Monitoring Program." AEC Doc. No. WAPD-CTA-IH-87 (Mar. 21, 1956); Nuclear Sci. Abs., 10 (14) 4089 (1956)

W-3 Anon., "Sanitary Engineering Conference, Baltimore Maryland, April 15-16, 1954." AEC Doc. No. WASH-275 (Add. 1955); Nuclear Sci. Abs., 10 (6) 2610 (1956)

LC Anon., "United Kingdon Atomic Energy Authority First Annual Report, 1954-1955." London, Her Majesty's Stationery Office, (1955); Nuclear Sci. Abs., 10, (15) 4475 (1956)

H U. S. Atomic Energy Commission, "Radiation Hazards in Firefighting: Safety and Fire Protection." AEC Doc. No. 3100 Tech. Bull. No. 4 (1955); Pub. Health Eng. Abs., 36 (1) 20 (1956)

FW Central Meteorological Observatory, Tokyo Japan, "The System of Routine Observations of Radioactivities in the Air, Rain-Water and Sea-Water in Japan." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 745 (1956)

EB Anon., "The Hazards to Man of Nuclear and Allied Radiations." London, Her Majesty's Stationery Office, 1956; Nuclear Sci. Abs. 10 (1) 55 (1956)

EB Anon., "Summary Reports of Committees on Effects of Atomic Radiation: (Meteorology, Oceanography, Agriculture)." AEC Doc. No. NP-6017 (1956); Nuclear Sci. Abs. 10, (18A) 7392 (1956)

T Anon., "Applying Radiation in Industry." Nucleonics 14 (5) 41 (1956)

EB Anon., "Semi-Annual Progress Report to the Division of Biology and Medicine." AEC Doc. No. AECU-3109 (Sept. 1955); Nuclear Sci. Abs. 10 (3) 1160 (1956)

MPC Anon., "Recapitulation of Tolerable Concentration of Radioiodine on Edible Plants." AEC Doc. No. HW-25239 (Aug. 1952); Nuclear Sci. Abs. 10 (11) 3410 (1956)

EB Anon., "Radioisotope Uptake in Marine Organisms with Special Reference to the Passage of such Isotopes as are Liberated from Atomic Weapons through Food Chains Leading to Organisms." AEC Doc. No. AECU-3079 (Sept. 1955) Nuclear Sci. Abs. 10 (4) 1718 (1956)

MI Anon., "Instrumentation for Radioactive - Pollution Studies." Task Group Report; J.A.W.W.A. 48, 397 (1956)

M Anon., "Health Physics Division Semiannual Progress Report for Period Ending July 31, 1956." AEC Doc. No. ORNL-2151 (Nov. 1956); Nuclear Sci. Abs. 10, (1) 52 (1956)

EB Anon., "Agricultural Research Program." ORO-145 (Progress report for Jan. 1955) Nuclear Sci. Abs. 10, (3) 1169 (1956)

W-7 6 Anon., "Decontamination of Waste Gases. Detailed Project Status Report. Job 11." AEC Doc. No, KLX-55 (Sept. 1949); Nuclear Sci. Abs. 10, (15S) 5248 (1956)

W-4 7 Anon., "Disposal of Atomic Waste at Windscale." Atomics 7 (12) 437 (Dec. 1956)

W-6 8 Anon., "Mobile Unit Rids Water of Radioactivity." Chem. Engr. 63, 130 (1956) Pub. Health Eng. Abs. 36 (7) 27 (1956)

W-6 9 Anon., "Solid Radioactive Waste Disposal at the National Reactor Testing Station." AEC Doc. No. TID-7517 (Part 1a) 250 (1956)

H Ashley, R. L., "Radiological Hazards of the Air Surrounding the IPR." AEC Doc. No. NAA-SR-Memo-195 (Feb. 1952); Nuclear Sci. Abs. 10 (17S) 7109 (1956)

MC Astin, A. V., Bullard, E. C. and Lewis, W. B., "International Comparison of Radioactivity Standards." Science 123, 895 (1956)

T Atcheson, G. J. and Beamer, W. H., "Neutron Activation Analysis with Van De Graaff Accelerator Application to the Halogens." Anal. Chem. 28, 237 (1956)

EB Auerback, C., "Biological Hazards of Nuclear and Other Radiations." Nature 178,453 (1956); Nuclear Sci. Abs. 10, (23) 11667 (1956)

H Bacq, Z. M., "Chemical Protection Against Ionizing Radiations." Research 9, 62 (Feb. 1956); Nuclear Sci. Abs. 10 (16) 5478 (1956)

W-7 Bailey, J. C. and Rohr, R. C., "Air-Bourne Contamination Resulting from Transferable Contamination on Surfaces." AEC Doc. No. K-1088 (Nov. 1953); Nuclear Sci. Abs. 10, (5) 1994 (1956)

T Ballantine, D. S., "Fission Products Utilization. VIII. Studies on the Use of Radiation as a Catalyst for Chemical Reactions." AEC Doc. No. BNL-389 (May 1956); Nuclear Sci. Abs. 10, (16) 5560 (1956)

FW Bandopadhyay, K. G., Ghosh, G. C., Bandopadhyay, P., Chakravarti, J. C. and Chatterjee, S. D., "Radioactive Nuclei in Rains Over Calcutta." Sci and Culture (India) 21, 273 (1955); Chem. Abs. 50 9887 d, (1956)

MI Banks, Celia J., "The Determination of α and β Activities in Mussels and Other Invertebrates." AEC Doc. No. IGO-AM/W-34 (Apr. 1956); Nuclear Sci. Abs. 10, (15) 4785 (1956)

MI Banks, Celia, J., "The Determination of α and β Activities in Vegetation, Roots, Seaweed, Soil, Seabed Sludge, Seashore Sand, Silt and River Mud." AEC Doc. No. IGO-AM/W-35 (Apr. 1956); Nuclear Sci. Abs. 10, (15) 4786 (1956)

MI Banks, C. J., and Duxbury, W. G., "The Determination of α and β Activity in Fish." AEC Doc. No. IGO-AM/W-36 (Apr. 1956); Nuclear Sci. Abs. 10, (15) 4517 (1956)

W-1 Bareis, D. W., "Purifying Liquid Nuclear Reactor Fuels." U. S. Patent No. 2,758,023 (Aug. 1956)

MC Barnes, J. W., Bonner, N. A., Browne, C. I., Hoffman, D. C., Portratz, H. A., Smith, H. L., Warren, B. and Kleinberg, J., "Collected Radiochemical Procedures." AEC Doc. No. AECD-3674 (Sept. 1954); Nuclear Sci. Abs. 10, (3) 1230 (1956)

EB Barnes, D. W. H., Harrison, G. E., Loutit, J. F., Raymond, W. H. A., and Neary, G. J., "The Monte Bello Rat, November 1953. Paper 1." AEC Doc. No. AERE-SPAR-1 (July 1955); Nuclear Sci. Abs. 10, (16) 5473 (1956)

F Barreira, F. and Laranjeira, M., "Determination of Atmospheric Radioactivity." Int. Conf. On Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 756 (1956)

MI Basson, J. K., "Absolute Alpha Counting of Astatine-211." Anal. Chem. 28, 1472 (1956)

T Beatty, K. O., Ferrell, J. K, and Richardson, F. M., "Radioisotopes in the Study of Fluid Dynamics." Peaceful Uses of Atomic Energy, 15, 194 (1956)

MC Beaufait, L. J., Jr. and Lukens, H. R., Jr., "Handbook of Radiochemical Analysis I, Radiochemical Techniques. II. Radiochemical Procedures." AEC Doc. No. NP-5056 (May 1953) NP-5057 (Mar. 1952); Nuclear Sci. Abs. 10, (6), 2626 (1956)

MI Bechmann, W. and Huster, E., "A 4 -Proportional Counter for Studying Nonvolatile Low-Energy Beta-Emitters with Complex Disintegration Schemes." Z. Naturforsch 10a, 85 (1955); Chem. Abs. 50,10554C (1956)

F Bell, C. G., Jr., "Sanitary Engineering Aspects of Long-Range Fallout From Nuclear Detonations (thesis)." AEC Doc. No. NYO-4654 (Jan. 1955); Nuclear Sci. Abs. 10, (5), 2593 (1956)

MC Bench, H. L. and Weisblatt, H. B., "Separation of Cesium from Sodium by Means of Fullers Earth." AEC Doc. No. K-443 (July 1949); Nuclear Sci. Abs. 10, (215) 10767 (1956)

M Bergstedt, B. A., "Application of the Electrostatic Precipitator to the Measurement of Radioactive Aerosols." J. Sci. Instr. 33, 142 (1956); Nuclear Sci. Abs. 10, (19) 8547 (1956)

M Bergstedt, Allan, "Properties of Electrostatic Precipitators for the Measurement of Radioactive Aerosols." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 764 (1956)

W-7 Binford, F. T. and Burnett, T. H. J., "A Method for the Disposal of Volatile Fission Products from an Accident in the Oak Ridge Research Reactor." AEC Doc. No. ORNL-2086 (Aug. 1956); Nuclear Sci. Abs. 10 (19) 8668 (1956)

M Black, S. C., "Low-Level Polonium Determination of Tissue and Urine." AEC Doc. No. UR-463 (Oct. 1956); Nuclear Sci. Abs. 10 (21) 109 (1956)

W-3 10 Blanco, R. E., Higgins, I. R. and Kibbey, A. H., "Separation of Fission Products from Aluminum Waste Solutions by Ion Exchange." AEC Doc. No. ORNL-301 (Aug. 1956); Nuclear Sci. Abs. 10, (19) 8338 (1956)

F Blifford, I. H., Jr., Friedman, H., Lockhart, L. B., Jr., and Baus, R. A., "Radioactivity of the Air." AEC Doc. No. NRL-4760 (Feb. 1955); Nuclear Sci. Abs. 10, (16) 6032 (1956)

F Blifford, I. H., Lockhart, L. B.and Baus, R. A., "Relation Between Air Concentration of Radioactive Fission Products and Fallout." Nature 177, 990 (1956); Chem. Abs. 50, 13621i (1956)

F Blifford, I. H., Lockhart, L. B., Jr. and Baus, R. A., "Collection of Atomic Bomb Debris from the Atmosphere by Impaction of Screens." Science 123, 1120 (1956)

F- Blifford, I. H., Jr., Lockhart, L. B., Jr. and Baus, R. A., "Relationship Between the Air Concentration of Radioactive Fission Products and Fallout." AEC Doc. No. NRL-4607 (Aug. 1955); Nuclear Sci. Abs. 10 (6A), 2592 (1956)

F Blifford, I. H., Jr. and Rosenstock, H. B., "Fallout Dosages At Washington, D. C." AEC Doc. No. NRL-4694 (Oct. 1955); Nuclear Sci. Abs. 10 (4) 1704 (1956); Science 123, 619 (1956)

MC Bloom, S. D., Reilly, E. O. and Toppel, B. J., "Improving Proportional Counter Resolution with a Graphite Cathode Liner." Rev. Sci. Instr. 26, 1201 (1955) Nuclear Sci. Abs. 10, (5) 2122 (1956)

MI Bogardus, B. J., "Continuous Beta-Gamma Air Monitor for K-1004-J." AEC Doc. No. K-418 (June 1949); Nuclear Sci. Abs. 10, (15S) 5326 (1956)

W-6 11 Brady, L. J. and Susano, C. D., "Uranium Content of Sewage Sludge; Oak Ridge Disposal Plants." AEC Doc. No. Y-471 (Aug. 1949); Nuclear Sci. Abs. 10, (11) 3580 (1956)

CD Breslin, A. J. and Solon, L. R., "Fallout Countermeasures for AEC Facilities." AEC Doc. No. HYO-4482-A (Dec. 1955); Nuclear Sci. Abs. 10 (17) 6493 (1956)

HS Brittain, R. O., "Some Problems in the Safety of Fast Reactors." AEC Doc. No. ANL-5577,(1956); Pub. Health Eng. Abs. 36, (8) 18 (1956)

C Browder, F. N., "Summary of Surface Decontamination Experience at Oak Ridge National Laboratory." AEC Doc. No. AECD-3998 (Nov. 1943 -July 1948); Nuclear Sci. Abs. 10, (17S) 7356 (1956)

B Brown, R. M. and Grumitt, W. E., "The Determination of Tritium in Natural Waters." Can. J. Chem. 34, 220 (1956); Nuclear Sci. Abs. 10, (23) 11773 (1956)

W-5 12 Brown, R. E., McConiga', M. J. and Rowe, P. P., "Geological and Hydrological Aspects of the Disposal of Liquid Radioactive Wastes." AEC Doc. No. TID-7517(Part 1b) 413 (1956)

W-5 13 Brown, R. E., Parker, H. M. and Smith, J. M., "Disposal of Liquid Wastes to the Ground." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 669 (1956)

MC Bruce, F. R., "Solvent Extraction Chemistry of the Fission Products." Proc. Int. Conf. on Peaceful Uses of Atomic Energy 1955, 7, 100 (1956); Chem. Abs. 50, 16419b (1956)

MC Bryant, F. J., Chamberlain, A. C., Morgan, A. and Spicer, G. S., "Radiostrontium Fallout in Biological Materials in Britain." AEC Doc. No. AERE-HP/R-2056 (Sept. 1956); Nuclear Sci. Abs. 10, (1) 46 (1956)

W-6 Buford, M. A., "River Water Monitoring Memo." AEC Doc. No. CF-47-8-240 (Aug. 1947); Nuclear Sci. Abs. 10, (5), 2245 (1956)

M Burnett, T. J. and Hatch, T. F., "Estimating Airborne Radioactive Particulate Hazards--A Review of Sampling Criteria." Am. Ind. Hyg. Assoc. Quart. 17, 80 (1956); Nuclear Sci. Abs. 10, (17) 6495 (1956)

LC Burney, L. E., "Public Health Interest and Contributions in the Expanding Atomic Energy Industry." AEC Doc. No. TID-7517 (Part 1b) 509 (1956)

MPC Bustad, L. K. and Terry, J. L., "Basic Anatomical, Dietary and Physiological Data for Radiological Calculations." AEC Doc. No. HW-41638 (1956)

W-6 Campana, R. J., Cummings, H. E. and Mausteller, J. W., "Behavior of Na-24 and Mo-99 as Water Contaminants Leaking from a 550 F. 2000 PSIG System." AEC Doc. No. MP-5887 (May 1956); Nuclear Sci. Abs. 10, (20) 9602 (1956)

C Campbell, D. O., "Removal of Fission Products from Stainless Steel." Int. Conf. on Peaceful Applications of Atomic Energy, Geneva, Switzerland, 9, 551 (1956)

FS Campbell, C. I., "Radiostrontium Fallout from Continuing Nuclear Tests." Science 124, 894 (1956)

EB Cember, H., Hatch, T. F., Watson, J. A. and Grucci, T., "Pulmonary Effects from Radioactive Barium Sulfate Dust." Arch. Ind. Health 12, 628 (1955) Nuclear Sci. Abs. 10, (4) 1698 (1956)

EB Cember, H., Hatch, T. F. and Watson, J. A., "The Elimination of Radioactive Barium Sulfate Particles from the Lung." Arch. Ind. Health 13 (2) 170 (1956)

EB Cember, H., Hatch, T. F., Watson, J. A., Grucci, T. and Bell, P., "The Elimination of Radioactive Barium Sulfate Particles from the Lung." Arch. Ind. Health 13, 170 (1956); Nuclear Sci. Abs. 10, (16) 5470 (1956)

B Chamberlain, A. C. and Dyson, E. D., "The Dose to the Trachea and Bronchi from the Decay Products of Radon and Thoron." Brit. J. Radiol. 29, 317 (1956); Nuclear Sci. Abs. 10, (20), 9075 (1956)

EB Chamberlain, A. C., "Soil-Plant-Animal Relationships of Fission Products Conference, July 21-23, 1955. Paper 15 Summary of Leading Points." AEC Doc. No. AERE-GPAR-15 (July 1955); Nuclear Sci. Abs. 10, (15) 4503 (1956)

B Chapman, N. G. and Humphrey, R. W., "An Investigation of the Variation of the Atmospheric Radioactivity at Wellington from 5 May to 18 July 1955." New Zealand J. Sci. Tech. B37, 396 (1955); Nuclear Sci. Abs. 10; (16) 5754 (1956)

F Chapman, N. G. and Humphrey, R. W., "An Investigation of the Variation of the Atomospheric Radioactivity at Wellington from May 5 to July 18, 1955." New Zealand J. Sci. Technol. 37B, 396 (1955); Chem. Abs. 50, 9887, B, (1956)

W-6 Cherubin, L. J., "Potential Hazards Associated with the Release of Laboratory Liquid Waste to the Mohawk River." AEC Doc. No. TID-7517 (Part 1b) 406 (1956)

W-1 14 Chesne, A. and Regnaut, P., "Method for Separation of Uranium-233 from Thorium Irradiated in Atomic Piles." Int. Conf. on Peaceful Applications of Atomic Energy, Geneva, Switzerland, 9, 583 (1956)

EB Chipman, W. A., "Passage of Fission Products through the Skin of Tuna." Fish and Wildlife Special Report No. 167 (Feb. 1956)

W-3 14a Christenson, C. W., Rex, E. H., Webster, W. M. and Vigil, F. A., "Reduction of Nitrate Nitrogen by Modified Activated Sludge." AEC Doc. No. TID-7517 (Part 1a) 264 (1956)

W-5 15 Clark, J. R. and Pohl, H. A., "Earth Disposal of Radioactive Wastes of SRP." AEC Doc. No. TID-7517 (Part 1a) 162 (1956)

W-1 16 Claus, W. D., "Fundamental Consideration in the Release of Large Quantities of Radioactive Wastes on Land and Sea." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 17 (1956)

EB Cohn, S. H., Rinehart, R. W., Robertson, J. S., Gong, J. K., Milne, W. L., Chapman, W. H. and Bond, V. P., "Internal Radioactive Contamination of Human Beings Accidentally Exposed to Radioactive Fallout Material." AEC Doc. No. USNRDL-TR-86 (May 1956); Nuclear Sci. Abs. 10, (17) 6470 (1956)

EB Cohn, S. H. and Milne, W. L., "The Effects of Combined Administration of Strontium-90 and External Radiation." AEC Doc. No. USNRDL-TR-89 (May 1956) Nuclear Sci. Abs. 10, (18A) 7400 (1956)

EB Cohn, S. H., Lane, W. B., Gong, J. K. and Sherwin, J.C., "Uptake, Distribution, and Retention of Fission Products in Tissues of Mice Exposed to a Simulant of Fallout from a Nuclear Detonation. I. Simulant of Fallout from a Detonation. Under Seawater." AEC Doc. No. USNRDL-TR-77 (Dec. 1955); Nuclear Sci. Abs. 10 (19) 8152 (1956)

EB Comar, C. L., Wasserman, R. H. and Nold, M. M., "Strontium-Calcium Discrimination Factors in the Rat." Proc. Soc. Expt. Biol. and Med. 92 (4) 859 (1956)

W-3 Committee, Sanitary Engineering, "Sanitary Engineering Aspects of Nuclear Energy, Progress Report." Proc. Amer. Soc. Civil. Eng. 81 Sep. No. 646 (Mar. 1956)

MI Connally, R. E., "Instrumental Methods of Gamma-Ray Spectroscopy." Anal. Chem. 28, 1847 (1956)

MPC Cook, M. J., Morgan, K. Z. and Barkow, A. G., "Maximum Permissible Level for Co-60." Am. J. Roentgenol. 75, 1177 (1956); Chem. Abs. 50, 16419b (1956)

EB Coopey, R. W., "The Abundance of the Principal Crustacea of the Columbia River and the Radioactivity they Contain." AEC Doc. No. HW-25191 (June 1953) Nuclear Sci. Abs. 10, (14S) 4119 (1956)

EB Coopey, R. W., "A Preliminary Comparison of the Nannoplankton and Net Plankton of the Columbia River." AEC Doc. No. HW-29298 (Sept. 1953) Nuclear Sci. Abs. 10 (14S) 4121 (1956)

W-3 Coppinger, E. A. and Tomlinson, R. E., "Heat Problems in the Disposal of High Level Radioactive Wastes." AEC Doc. No. TID-7517 (Part 1b) 475 (1956)

W-5 17 Cowser, K. E., Morton, R. J. and Bendixen, T. W., "Evaluation of the Watertightness of an Asphalt, Tamped-Clay Pit Liner." AEC Doc. No. CF-55-3-128 (Mar. 1955); Nuclear Sci. Abs. 10 (21S) 10827 (1956)

EB Cronkite, E. P., Dunham, C. L., Griffin, D. and McPherson, S. D., "Twelve-Month Postexposure survey on Marshallese Exposed to Fallout Radiation." AEC Doc. No. BNL-384 (Aug. 1955); Nuclear Sci. Abs. 10 (14) 3968 (1956)

F Crosthwait, L. B., "Measurement of Atmospheric Radioactivity at Wellington." New Zealand J. Sci. Tech. 37B, 382 (1955); Chem. Abs. 50, 9887, a, (1956)

W-1 18 Culler, F. L., "Reprocessing of Reactor Fuel and Blanket Materials by Solvent Extraction." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 464 (1956)

W-1 19 Culler, F. L., Jr. and Bruce, F. R., "The Processing of Uranium-Aluminum Reactor Fuel Elements." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 484 (1956)

B Curtis, J. T. and Dix, R., "Distribution of Alpha Radioactivity in Certain Forest Types." Science 123, 799 (1956); Nuclear Sci. Abs. 10, (19) 8166 (1956)

F Dale, G. C., Kendall, R. A. and McKendrick, J. C., "Dose Rates from Ground Contaminated with Fission Products of U^{225} and Pu^{239}." AEC Doc. No. ARE-H-7/53 (May1953); Nuclear Sci. Abs. 10, (16) 5819 (1956)

MC Dalton, J. C. and Welch, G. A., "The Rapid Separation and Determination of Radiostrontium and Radiocesium in Fission Product Mixtures." Anal. Chim. Acta. 15, 317 (1956)

W-4 Danckwerts, P. V., "Fission Product Disposal from Windscale." Nuclear Eng. 1, 25 (1956); Nuclear Sci. Abs. 10 (19) 8170 (1956)

W-7 Davidge, P. C. and Lock, C. J. L., "Fission Product Gases From a Homogeneous Power Reactor." AEC Doc. No. AERE-C/M-202 (Nov . 1955); Nuclear Sci. Abs. 10 (19) 8650 (1956)

H Davidson, S., Goldblith, S. A. and Proctor, B. E., "Glass Dosimetry." Nucleonics 14 (1) 34 (1956)

B Davis, D. M. and Davis, F. J., "Air Activity Studies Conducted at Corryton, Tennessee and Gainesville, Florida." AEC Doc. No. CF-51-9-63 (Oct. 1951) Nuclear Sci. Abs. 10 (5) 2246 (1956)

MI Davis, D. M., Hart, J. C. and Morgan, K. Z., "Aerial Surveying with Light Aircraft for the Detection of Radioactive Contamination on the Ground." AEC Doc. No. CF-52-4-87 (Apr. 1952); Nuclear Sci. Abs. 10, (21S) 10900 (1956)

T Deal, C. H., Otvos, J. W., Smith, V. N. and Zucco, P. S., "Radiological Detector for Gas Chromatography." Anal. Chem. 28 1958 (1956)

W-5 20 de Laguna, W., "Some Geologic Factors that Influence Disposal of Radioactive Wastes into Pits." AEC Doc. No. TID-7517 (Part 1b) 426 (1956)

W-7 21 Dennis, R., Silverman, L., Billings, C. E. and Rossano, A. T., Jr., et al, "Air Cleaning Studies." AEC Doc. No. NYO-4608 (Jan. 1956); Nuclear Sci. Abs. 10, (23) 11779 (1956)

HS- Desov, A. E., "Protection from Radioactivity." Stroitel. Prom. 34, (2) 28 (1956); Chem. Abs. 50, 6943 (1956)

MI Dillon, I. G. and Burris, L., Jr., "Estimation of Fission Product Spectra in Fuel Elements Discharged from the Power Breeder Reactor No. 2." AEC Doc. No. ANL-5334 (Oct. 1954); Nuclear Sci. Abs. 10 (15) 4916 (1956)

HS Callihan, D., "Nuclear Safety in Processing Reactor Fuel Solutions." Nucleonics 14 (7) 38 (1956)

W-6 22 Dobbins, W. E., Edwards, G. P. and Gulevich, W., "Removal of Radioactivity from Laundry Wastes by Trickling Filters." AEC Doc. No. NYO-4641 (May 1955) Pub. Health Eng. Abs. 36 (10) 23 (1956)

F Dunning, G. M., "Criteria for Evaluating Gamma Radiation Exposures from Fallout Following Nuclear Detonations." Radiology 66, 685 (1956)

M Dunning, G. M., "Two Ways to Estimate Thyroid Dose from Radioiodine in Fallout." Nucleonics 14, (2), 38 (1956); Nuclear Sci. Abs. 10, (15) 4809 (1956)

H Dunster, H. J., "Contamination of Surfaces by Radioactive Materials. The Deviation of Maximum Permissible Levels." Pub. Health Eng. Abs. 36 (6) 20 (1956)

W-4 23 Dunster, H. J., "The Discharge of Radioactive Waste Products into the Irish Sea. Part 2. The Preliminary Estimate of the Safe Daily Discharge of Radio-Active Effluent." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 712 (1956)

MC Duyckaerts, G. and Fuger, J., "Contribution to the Study of the Separation of Fission Rare Earths by Ethylenediamine Tetraacetic Acid." Anal. Chim. Acta. 14, 243 (1956)

W-1 24 Dwyer, O. E., Teitel, R. J. and Miswall, R. H., Jr., "High-Temperature Processing Systems for Liquid-Metal Fuels and Breeder Blankets." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 604 (1956)

FW Eisenbud, M., "Monitoring Network for Measuring Radioactive Fallout." J.A.W.W.A. 48, (6) 659 (1956)

F Eisenbud, M. and Harley, J. H., "Radioactive Fallout through September 1955." Science 124, 251 (1956); Nuclear Sci. Abs. 10 (21) 9959 (1956)

F Eizo Tajima and Tadayoshi Doke, "Airborne Radioactivity." Science 123, 211 (1956)

FW Eliassen, R. and Lauderdale, R. A., "Radioactive Fallout in Water Supply at Portland, Maine." J.A.W.W.A. 48, 665 (1956); Chem. Abs. 50 13345d (1956)

W-6 25 Eliassen, R. and Lauderdale, R. A., "Removal of Radioactive Fallout from Water by Municipal Water Treatment Plants." AEC Doc. No. TID-7517 (Part 1a) 19 (1956)

W-6 Emmons, A. H., et al., "Process for Water Decontamination." U. S. Patent No. 2,752,309 (June 1956); Nuclear Sci. Abs. 10 (13) 12131 (1956)

MC Ewing, R. E., "Determination of Radiocesium with Chloroplatinic Acid." AEC Doc. No. HW-18146 (June 1950); Nuclear Sci. Abs. 10, (5) 2293 (1956)

C Ewing, B. B., Dryman, W. P. and Gloyna, E. F., "Recovery of Uranium from Saline Solutions by Biological Slimes." AEC Doc. No. ORO-148 (1955) Chem. Abs. 50, 10952c (1956)

M Facchini, U. and Malvicini, A., "The Fast Ionization Chamber in the Study of α Radioactivity in Air." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 761 (1956)

W-4 26 Fiar, D. R. R. and McLean, A. S., "The Disposal of Waste Products in the Sea. Part 3. The Experimental Discharge of Radioactive Effluents." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 716 (1956)

W-3 Fairbourne, S. F., Reid, D. G. and Kramer, B. R., "Experience of Handling Low Level Active Liquid Wastes at the Idaho Chemical Processing Plant." AEC Doc. No. IDO-14334 (July 1955); Nuclear Sci. Abs. 10, (1) 115 (1956)

F Farma, P., "Study of Airborne Activity Resulting from Decontamination of Ships Contaminated with Radioactive Fallout." AEC Doc. No. USNRDL-TR-94 (May 1956); Nuclear Sci. Abs. 10, (19) 9069 (1956)

W-3 27 Farmer, W. S., "Activities in Process Water." AEC Doc. No. CF-47-4-115 (April 1947); Nuclear Sci. Abs. 10, 551 (July 1956)

FW Farrigue, H., "Radioactivity of the Atmosphere." Compt. rend. 241, 1971 (Dec. 1955); Nuclear Sci. Abs. 10, (15) 4710 (1956)

W-1 28 Feder, H. M., "Pyrometallurgical Processing of Nuclear Materials." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 586 (1956)

W-1 29 Ferguson, D. E., "The Chemical Processing of Aqueous Homogeneous Reactor Fuel." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 514 (1956)

M Finkelstein, A. and Lesimple, M., "Determination of Tritium in Tritiated Water." J. Nuclear Energy 2, 101 (Dec. 1955); Nuclear Sci. Abs. 10, (15) 5023 (1956)

W-1 30 Flanary, J. R., "Solvent Extraction Separation of Uranium and Plutonium from Fission Products by Means of Tributyl Phosphate." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 528 (1956)

W-1 31 Fletcher, J. M., "Chemical Principles in the Separation of Fission Products from Uranium and Plutonium by Solvent Extraction." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 459 (1956)

W-1 Foster, D. L., Savolainen, J. E. and Wymer, R. G., "Nuclear Reactor Fuel Dissolution." Int. Conf. on Peaceful Applications of Atomic Energy, Geneva, Switzerland 9, 546 (1956)

M Fraser, D. A., "The Collection of Submicron Particles by Electrostatic Precipitation." Am. Ind. Hyg. Assoc. Quart. 17, 75 (1956); Nuclear Sci. Abs. 10, (17) 6620 (1956)

MC Frisch, M. and Feldman, I., "A Note of Precision Plating of Polonium." AEC Doc. No. UR-426 (Jan. 1956); Nuclear Sci. Abs. 10, (7) 2974 (1956)

W-7 Gad, G., "Effect on Ground Water, Surface Water and Air of Radioactive Wastes from Nuclear Reactors." Stodte-hygiene 6,209 (1955); Water Pollution Abs. 29, 180 (May 1956)

W-5 Gaines, G. L. and Thomas, H. C., "Adsorption Studies on Clay Materials. V. Montmorillonite-Cesium-Strontium at Several Temperatures." J. Chem. Phys. 23, 2322 (Dec. 1955); Nuclear Sci. Abs. 10, (5) 2039 (1956)

FW Garner, J. M., Jr. and Kochtitzky, O. W., "Radioactive Sediments in the Tennessee River System." J. Sanitary Eng. Div. Am. Soc. Civil Engrs. 82, SA 4, Paper 1051 (Aug. 1956); Nuclear Sci. Abs. 10, (22) 10995 (1956)

F Garrigue, H., "Another Renewal of Atmospheric Radioactivity of Atomic Origin." Compt. rend. 240, 1453 (1955); Pub. Health Eng. Abs. 36, 13 (1956)

F Garrigue, H., "Radioactivity of Air and Precipitations." Compt. rend. 243 584 (Aug. 1956); Nuclear Sci. Abs. 10,(22) 11560 (1956)

W-4 32 Gemmell, Lee, "The Brookhaven Experience with Sea Disposal of Radioactive Wastes." AEC Doc. No. TID-7517 (Part 1a) 153 (1956)

EB Gettler, A. D. and Norris, C., "Poisoning from Drinking Radium Water." J. Am. Med. Assoc. 100, 400 (Feb. 1933)

W-6 33 Geyer, J. C., MacMurray, L. C., Talboys, A. P. and Brown, H. W., "Low-Level Radioactive Waste Disposal." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 19 (1956)

W-7 Gifford, F., "Meteorological Parameters in Waste Disposal." AEC Doc. No. TID-7517 (Part 1a) 57 (1956)

F Giletti, B. J. and Kulp, J. L., "Radon Leakage from Radioactive Minerals." Am. Mineralogist 40, 481 (1955); Nuclear Sci. Abs. 9, (9) 636 (1955)

B Gill, J. R. and Moore, G. W., "Carnotite-Bearing Sandstone in Cedar Canyon Slim Buttes, Harding County, South Dakota." U.S. Geol. Survey Bull. 1009-1, (1955); Nuclear Sci. Abs. 10, (4) 1790 (1956)

W-6 Gloyna, E. F., Hermann, E. R. and Dryman, W. R., "Oxidation Ponds- Waste Treatment Studies, Radioisotope Uptake and Algae Concentration." AEC Doc. No. AECU-3113 (June 1955); Nuclear Sci. Abs. 10, (4) 388 (1956)

W-1 34 Glueckauf, E., "The Long-Term Aspect of Fission Product Disposal." Atomics 6, 270 , 281 (1955); Nuclear Sci. Abs. 10, (15) 4611 (1956); Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 3 (1956)

EB Glueckauf, E., "Fission Product Uptake in Plants. Paper 7." AEC Doc. No. AERE-SPAR-7 (July 1955); Nuclear Sci. Abs. 10 (17) 6515 (1956)

W-1 35 Glueckauf, E. and Healy, T. V., "Chemical Processing of Fission Product Solutions." Int. Conf. on the Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 635 (1956); See also, Atomics 6, 370 (1955); Nuclear Sci. Abs. 10, (4) 1773 (1956)

MC Goldin, A. S., "Determination of Strontium-90 (Preliminary Report)." AEC Doc. No. TID-7517 (Part 1b) 323 (1956)

T Goldin, A. S., Kroner, R. C., Rosen, A. A. and Ettinger, M. B., "Use of Carbon-14 to Study Organic Adsorption Properties of Activated Carbon." Int. Conf. on Peaceful Uses of Atomic Energy, 15,47 (1956)

W-1 36 Goldschmidt, B., Regnant, P. and Prevot, I., "Solvent Extraction of Plutonium from Uranium Irradiated in Atomic Piles." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 492 (1956)

W-3 Gorecki, E., "New Problems of Removal of Radioactive Contamination from Raw Water, Waste and Waste Sludge." Gaz, Woda i Tech Sanit. 29, 345 (1955) Chem. Abs. 50, 10952 (1956)

HS Gorman, A. E., "Sanitary Engineering Activities of the U.S. Atomic Energy Commission in Relation to Environmental Problems of the Nuclear Energy Industry." AEC Doc. No. TID-7517 (Part 1b) 538 (1956)

HS Gorman, A. E., "Sanitary Engineering Objectives in the Atomic Energy Industry." AEC Doc. No. TID-7517 (Part 1a) 4 (1956)

W-3 Gorman, A. and McCallum, G. E., "Disposal of Atomic Wastes in the Atomic Energy Industry." Trans. 5th World Power Conf. Vienna 1956 Div. 3, Sect J, Paper 130 J/6; Chem. Abs. 50, 12671c (1956)

W-3 37 Granquist, D. P. and Tomlinson, R. E., "Estimated Magnitude of Waste Disposal Problems." AEC Doc. No. TID-7517 Part 1b, 400 (1956)

W-7 Greenfield, M. A., Norman, A. and Gamble, D. P., "Radioargon Effluent from the Stock of the Medical Research Reactor." AEC Doc. No. UCLA-344 (Sept. 1955) Nuclear Sci. Abs. 10, 162 (1956)

W-1 38 Gresky, A. T., "Solvent Extraction Separation of U^{233} and Thorium from Fission Products by Means of Tributyl Phosphate." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9 505 (1956)

FS Grosch, D. S. and LaChance, L. E., "Fate of Radiostrontium Fed to Habrobracon Females." Science 123, 141 (1956)

W-6 39 Guchi Yoshu, Norimitsu Watabe and Yauchiro Okada, "Biological Decontamination of Fission Products." Science 123, 320 (1956)

W-1 40 Haeffner, E., Nilsson, G. and Hultgren, A., "The Extraction of Uranium and Plutonium with Tetrabutyl Ammonium Nitrate, Cupferron and Neocupferron as Complexing Agents." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 498 (1956)

F Haxel, O. and Schumann, G., "Self-Purification of the Atmosphere." Z. Physik 142, 127 (1955); Chem. Abs. 50, 13622a (1956)

EB Haldane, J. B. S. and Spiers, F. W., "Genetical Effects of Radiations from Products of Nuclear Explosions." Nature 177, 226 (Feb. 1956); Nuclear Sci. Abs. 10 (16) 5471 (1956)

FW Harley, J. H., "Operation Troll, Preliminary Report." AEC Doc. No. NYO-4656 (1956)

W-7 Harris, W. B. and Mason, M. G., "Operating Economics of Air-Cleaning Equipment Utilizing the Reverse Jet Principle." Ind. Eng. Chem. 47, 2423 (1955) Nuclear Sci. Abs. 10, (3) 1159 (1956)

W-8 41 Harris, W. B. and Weinstein, M. S., "Open Field Burning of Low Level Radioactive Contaminated Combustible Materials." AEC Doc. No. TID-7517 (Part 1a) 229 (1956)

M Hatch, T. F., "Measurement and control of Radioactive Particulate Contamination." AEC Doc. No. AECD-4096 Summary Report; Nuclear Sci. Abs. 10, (17S) 7357 (1956)

W-2 42 Hatch, L. P. and Regan, W. H., Jr., "Processing of High Level Atomic Waste with the View of Ultimate Disposal." AEC Doc. No. TID-7517 (Part 1b) 384 (1956)

W-1 43 Hatch, L. P., Regan, W. H., Manowitz and Hittman, F., "Processes for High Level Radioactive Waste Disposal." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 648 (1956)

W-2 Hatch, L. P. and Regan, W. H., Jr., "Concentrating Fission Products." Nucleonics 13, (12) 27 (1955); Nuclear Sci. Abs. 10, (2) 162 (1956)

MI Hayes, F. N., Rogers, S. B. and Wright, L. H., et al, "Counting Suspensions in Liquid Scintillators." Nucleonics 14 (3), 48 (Mar. 1956); Nuclear Sci. Abs. 10, (16) 5842 (1956)

MPC Healy, J.W., "The Calculation of Maximum Permissible Concentrations for Long-Lived Radioisotopes." Radiation Research 4, 367 (May 1956); Nuclear Sci. Abs. 10, (20) 9076 (1956); Chem. Abs. 50, 13622c (1956)

MPC Healy, J. W., "A Review of the Maximum Permissible Levels for Natural Thorium." AEC Doc. No. HW-40105 (Nov. 1955)

W-3 Healy, J. W., "Waste Disposal in AEC Installations." Ohio State Univ. Health Physics Conference (Columbus, Ohio) (June 13-15, 1955)

M Heath, R. L., "Fission Product Monitoring in Reactor Coolant Streams." AEC Doc. No. IDO-16213, (Jan. 1956); Pub. Health Eng. Abs. 36, 11 (1956)

W-3 43a Heatherton, R. C., "Disposal of Fluoride Wastes." AEC Doc. No. TID-7517 (Part 1a) 275 (1956)

MC Helf, S., Castorina, T. C., White, C. G. and Graybush, R. J., "Radioassay of Tagged Sulfate Impurity in Cellulose Nitrate." Anal. Chem. 28, 1465 (1956)

W-3 44 Henderson, C., Robeck, G. G. and Palange, R. C., "Effects of Low-Level Radioactivity in the Columbia River." Pub. Health Repts. (U.S.) 71, 6 (1956) Nuclear Sci. Abs. 10, (6A) 2595 (1956)

B Herculano de Carvalha, A., "Radioactivity of Portuguese Mineral Waters." Rev. Quim. Para e Apl. 4, 206 (1956); Chem. Abs. 50, 10949e (1956)

W-6 45 Hermann, E. R. and Gloyna, E. F., "Summary of Investigations on the Removal of Radioisotopes from Waste Water by Oxidation Ponds." AEC Doc. No. TID-7517 (Part 1a) 27 (1956)

EP Hicks, B. P. and Penney, W. G., "Symposium on the Physical Effects of Atomic Weapons. Paper No. 14. The Base Surge: The Mechanism of Fall-Out." Pub. Health Eng. Abs. 36, 18 (1956)

EB Hideo, N., Kowalewsky, B. W. and Larson, K. H., "The Influence of Soil Organic Matter on the Uptake of Sr-90 by Barley and Tomato Plants." AEC Doc. No. ULCA-349 (Oct. 1955) See also ULCA-380 (Nov. 1956)

W-3 46 Higgins, I. R. and Wymer, R. G., "Diban--Ion Exchange Waste Disposal Scheme." AEC Doc. No. ORNL-1984 (Nov. 1955); Nuclear Sci. Abs. 10, (19) 8339 (1956)

H Honstead, J. F., "Overcoming Radiation Hazards of Atomic Power Plants." Gen. Elec. Review 58, 57 (Nov. 1955); Pub. Health Eng. Abs. 36, (8) 17 (1956)

M Honda, M., "A Proposed Method of Analysis of Radioactive Substances in Rain Water." AEC Doc. No. AEC-TR-2104 (1956); Nuclear Sci. Abs. 10, (20) 9151 (1956)

F Horad, A. G., Eisenbud, M. and Harley, J. H., "Annotated Bibliography on Fall-out Resulting from Nuclear Explosions." AEC Doc. No. NYO-4753 (Sept. 1956); Nuclear Sci. Abs. 10, (1) 51 (1956)

T House, R. and Fries, B. A., "Radioactive ABS in Activated Sludge Sewage Treatment." This Journal 25, 492 (1956)

H Howard, A., "The Hazards from the Increasing Use of Ionizing Radiations: A Symposium. III. An Attempt to Assess the Genetic Changes Resulting from the Irradiation of Human Populations." Brit. J. Radiol. 29, 270 (May 1956); Nuclear Sci. Abs. 10, (20) 9074 (1956)

H Howells, D. H., "Introduction to Basic Radiological Health for Water Works Personnel." Water & Sew. Wks. 103, 145 (1956)

* M Hurst, W. M., "Liquid Monitoring Device." U.S. Patent 2,738,426 (Mar. 1956) Nuclear Sci. Abs. 10 (18A) 8108 (1956)

W-3 47 Hutchinson, J. P., Christenson, C. W. and Mathews, E. R., "Treatment of Wastes Containing Radioactive Barium, Lanthanum, Strontium and Yttrium." AEC Doc. No. TID-7517 (Part 1a) 310 (1956)

W-1 48 Hyman, H. H., Vogel, R. C. and Katz, J. J., "Decontamination of Irradiated Reactor Fuels by Fractional Distillation Processes Using Uranium Hexafluoride." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 613 (1956)

* C Huff, J.B., "Electrodecontamination of Metals," Nucleonics 14 (6) 70 (1956)

Reproduced from best available copy.

T Inose, S., Kato, M., Sato, S. and Shiraishi, N., "The Field Experiment of Littoral Drift Using Radioactive Glass." Int. Conf. on Peaceful Uses of Atomic Energy, 15, 211 (1956)

M Ishii, C., "Method of Measurement of Radioactive Dusts in the Upper Air by Radiosonde." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 747 (1956)

T Ivanov, M. V., "Using Isotopes in Studies of Sulfate-Reduction Activity in Lake Belovod." Mikrobiologiya 25, 305 (1956); Chem. Abs. 50, 17263i (1956)

MI Jacobs, R. B., Lewis, L. G. and Riehl, F. J., "Determination of Hydrogen by Beta-Ray Absorption." Anal. Chem. 28, 324 (1956)

H Jacobson, L. O., Marks, E. K. and Gaston, E. O., "Modification of Radiation Injury in the Rabbit." Proc. Soc. Exptl. Biol. Med. 91, 135 (Jan. 1956); Nuclear Sci. Abs. 10, (16) 5479 (1956)

B Jech, C., "Retention of Radon Decay Products in Human Lungs." Arch. Ind. Health 13, 475 (May 1956); Nuclear Sci. Abs. 10, (20) 9071 (1956)

T Jefferson, S., Cameron, J. F., Wildblood, A. M. and Putman, J. L., "Leak Detection in Water Mains Using Radioisotopes." AEC Doc. No. AERE-I/R-1693 (Jan. 1956); Nuclear Sci. Abs. 10 (17), 6644 (1956)

H Joffre, H., "Radiation Hazards Near Uranium Piles." Comm. Energie Atomique (Fr.) Rapp No 508 (1956); Chem. Abs. 50, 13620i (1956)

EB Johns, C. G., "The Absorption and Distribution of Radio-Strontium (Sr^{89}) and Radioruthenium (Ru^{103}) in Certain Vegetable Crops (thesis)." AEC Doc. No. AECU-3101 (Sept. 1955); Nuclear Sci. Abs. 10, (7) 2970 (1956)

W-2 49 Johnson, J. R., Fulkerson, S. D., McVay, T. N. and Warde, J. M., "Heat Experiments for Self Fixation of Radioactive Wastes in Clay-Flux Mixtures." AEC Doc. No. TID-7517 (Part 1b) 339 (1956)

EB Jones, H. G., "Some Factors Influencing the Gastro-Intestinal Absorption of Strontium in Rats. Paper 6." AEC Doc. No. AERE-SPAR-6 (July 1955); Nuclear Sci. Abs. 10, (15) 4516 (1956)

W-3 50 Jonke, A. A., "A Fluidized-Bed Technique for Treatment of Aqueous Nuclear Wastes by Calcination to Oxides." AEC Doc. No. TID-7517 (Part 1b) 374 (1956)

MI Jordan, H. S. and Mitchell, R. N., "A Versatile Portable Air Sampler." Am. Ind. Hyg. Assoc. Quart. 17, 303 (1956); Nuclear Sci. Abs. 10, (22) 11325 (1956)

W-3 Jury, S. H., "Heat Conduction Losses in Reactor Waste Basins." AEC Doc. No. TID-7517 (Part 1b) 397 (1956)

MC Kahn, B., "Procedures for the Analysis of Some Radionuclides Absorbed on Soil." AEC Doc. No. ORNL-1951 (Oct. 1955); Nuclear Sci. Abs. 10, (3) 1240 (1956)

MC Kahn, B., "Leaching of Some Fission Products from Soil." Anal. Chem. 28, 216 (1956)

MI Kalil, F., and Garner, J. M., Jr., "A System Which Continuously Records Water Level and Contamination." Nucleonics 14 (7), 56 (1956); Nuclear Sci. Abs. 10, (21) 10125 (1956)

T Kaufman, W. J., and Orlob, G. T., "Measuring Ground Water Movement with Radioactive and Chemical Tracers." J.A.W.W.A. 48, (5) 559 (1956)

W-5 Kaufman, W. J., Orcutt, R. G. and Klein, G., "Underground Movement of Radioactive Wastes." AEC Doc. No. AECU-3115 (Aug. 1955); Nuclear Sci. Abs. 10, (3), 1327 (1956)

HS Kelman, L. R., Wilkinson, W. D., Stuck, A. B. and Goertz, R. C., "The Safe Handling of Radioactive-Pyrophoric Materials." AEC Doc. No. ANL-5509 (Dec. 1955)

MC Kenjiro Kimura, Nagao Skeda and Kenji Yoshihara, "Detection of Rh-103 in The Bikini Ashes." Bull. Chem. Soc. (Japan) 29, 395 (1956); Chem. Abs. 50 11836c (1956)

W-3 Kenny, A. W., "The Disposal of Radioactive Wastes - The Problem in Great Britain." Proc. Soc. Water Treat. and Exam. 2 (Part 2, 80 (1953); Pub. Health. Eng. Abs. 36, 8, 22 (1956)

EB Kiba, T., Ohashi, S., Shibata, M. and Mizube, T., "Radioactive Substances found in the So-Called Atom Blast Tuna Fish." AEC Doc. No. AEC-tr-2104; Nuclear Sci. Abs. 10, (20) 9150 (1956)

MC Kienberger, C. A., Greene, R. E. and Pepper, C. E., "Determination of Alpha Activity of Uranium in Mud." AEC Doc. No. K-434 (July 1949); Nuclear Sci. Abs. 10, (8) 3123 (1956)

F Kimura, K., "Introduction to Special Collection of Papers." AEC Doc. No. AEC-tr-2104. Translated from Japan Analyst 3, 335 (1956); Nuclear Sci. Abs. 10, (20), 9146 (1956)

M King, W. C., "Monitoring the Liquid Wastes Discharged from the Idaho Chemical Processing Plant." AEC Doc. No. IDO-14378 (June 1956); Nuclear Sci. Abs. 10, (19) 8337 (1956); See Also, Chem. Abs. 50, 16428 (1956)

B King, P., Lockhart, L. B., Jr., Baus, R. A. and Patterson, R. L., Jr., et al, "RaD, RaE, and Po in the Atmosphere." Nucleonics 14, (6), 78 (1956) Nuclear Sci. Abs. 10, (17) 7062 (1956)

W-3 Kleinschmidt, R. S., "Optimum Flow Detention Characteristics of Tanks for Decay of Pile Cooling Water Activity and Storage of Fuel Elements." AEC Doc. No. TID-7517 (Part 1a) 60 (1956)

W-7 Klevin, P. B., Weinstein, M. S. and Harris, W. B., "Ground Level Contamination from Stack Effluents." Am. Ind. Hyg. Assoc. Quart. 17, 189 (1956) Nuclear Sci. Abs. 10, (21) 9980 (1956)

Reproduced from best available copy.

MI Kline, S. A., "Development of Equipment for Detection of Atmospheric Xenon." AEC Doc. No. CE-2674 (Jan. 1945); Nuclear Sci. Abs. 10 (20S), 9762 (1956)

MC Ko, R., "Electrodeposition of the Actinide Elements." AEC Doc. No. HW-41025 (Jan. 1956); Nuclear Sci. Abs. 10, (10) 3275 (1956)

W-3 51 Krieger, H. L., Kahn, B. and Straub, C. P., "The Removal of Fission Products from an Acid Aluminum Nitrate Solution by Co-Precipitation Methods." Pub. Health Eng. Abs. 36, (6) 20 (1956); AEC Doc. No. ORNL-1966 (Oct. 1955)

ES Krumholy, L. A., "Observations of the Fish Population of a Lake Contaminated by Radioactive Wastes." Am. Museum of Nat. History Bull. 110, Art. 4 (1956)

B Kustnez, H. L., "Radon Daughters in Mine Atmospheres--A Field Method for Determining Concentrations." Am. Ind.Hyg. Assoc. Quart. 17, 80 (1956); Nuclear Sci. Abs. 10, (17) 6496 (1956)

FW Labeyrie, J. and Weill, J., "Measurement of Radioactivity in the Atmosphere and Pollution in the Vicinity of an Atomic Center." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 752 (1956); See Comm. Energie atomique Rapp. No. 442 (1955); Chem.Abs. 50, 5956 (1956)

T Lacey, W. J. and Laguna, W. D., "Method of Preparing Radioactive Cations for Tracing Ground Water." Science 124, 402 (1952)

W-6 Lacy, W. J. and Lindsten, D. C., "Removal of Radioactive Contaminants from Water by Ion Exchange Slurry." AEC Doc. No. CF-55-1-200 (Jan. 1955) Nuclear Sci. Abs. 10, (8) 573 (1956)

CD Lalli, G., "The Decontamination of Water in Wartime by Means of Ion Exchange Resins." Minerva Med. (Ital.) 2:1372 (54)

MI Landry, J. W., "High-Level Sampling Devices for Radiochemical Plants." Int. Conf. on Peaceful Applications of Atomic Energy, Geneva, Switzerland 9, 555 (1956)

W-4 52 Lang, J. C. and Jarrett, A. A., "Radioactive Waste Disposal at North American Aviation, Inc." AEC Doc. No. TID-7517 (Part 1a) 132 (1956)

MC Langham, W.H., "Determination of Internally Deposited Radioactive Isotopes from Excretion Analyses." Am. Ind. Hyg. Assoc. Quart. 17, 305 (1956); Nuclear Sci. Abs. 10, (22) 10996 (1956)

F Lapp, R. E., "Global Fall-Out." Pub. Health Eng. Abs. 36, 10 (1956)

W-1 53 Lawroski, S., "Survey of Separations Processes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland, 9, 575 (1956)

MI Leboeuf, M. B. and Connally, R. E., "Beta in Line Monitor for RCU Stream." AEC Doc. No. HW-28047 (May 1953); Nuclear Sci. Abs. 10, (15), 5325 (1956)

L Lebeouf, M. S. and Connally, R. E., "A Method for the Analysis of Radionuclide Mixtures Using a Gamma-Beta Scintillation Spectrometer." AEC Doc. No. UW-27090 (Feb. 1955); Nuclear Sci. Abs. 10, (11) 3637 (1956)

L-1 Lemon, R. B. and Reid, D. G., "Experience with a Direct Maintenance Radiochemical Processing Plant." Int. Conf. on Peaceful Applications of Atomic Energy, Geneva, Switzerland, 9, 552 (1956)

L Lerner, M. W. and Petretic, G. J., "Separation of Rare Earths from Thorium Nitrate." Anal. Chem. 28, 227 (1956)

L Levin, G. V., Harrison, V. R., Hess, W. C. and Gurney, H. C., "A Radioisotope Technique for the Rapid Detection of Coliform Organisms." Am. Jour. Pub. Health 46, 1405 (1956)

L Libby, W. F., "Radioactive Fall-Out." Bull. Atomic Sci. 11, 256 (1955); Pub. Health Eng. Abs. 36, (1) 19 (1956)

L Libby, W. F., "Dosages from Natural Radioactivity and Cosmic Rays." Science 122, 57 (July 1955); Nuclear Sci. Abs. 10 (21), 9971 (1956)

L Libby, W. F., "Radioactive Fallout and Radioactive Strontium." Science 123, 657 (April 1956); Nuclear Sci. Abs. 10, (18A), 7435 (1956); See also: Chem. Abs. 50, 10552h (1956)

L Libby, W. F., "Radioactive Strontium Fallout." Proc. Natl. Acad. Sci. U.S. 42, 365 (June 1956); Nuclear Sci. Abs. 10, (17) 6497 (1956)

L-3 Lieberman, J. A., "AEC Waste Disposal Research and Development Program." AEC Doc. No. TID-7517 (Part 1a) 10 (1956)

W-3 Lieberman, J. A., "Disposal of Radioactive Wastes - A Growing Problem." Civil Eng. 25 (7) 44 (1956)

L List, R. J., "Annotated Bibliography on the Transport and Deposition of Atomic Debris." AEC Doc. No. TID-3061 (Jan. 1956); Nuclear Sci. Abs. 10, 566 (1956)

L Long, Wm. M., "Radioactive Fallout - A Plan for Protection." Pub. Wks. 86, 107 (1955); Pub. Health Eng. Abs. 36, 20 (1956)

L Lowder, W. M. and Solon, L. R., "Background Radiation: A Literature Search." AEC Doc. No. NYO-4712 (July 1956); Nuclear Sci. Abs. 10, (1) 50, (1956)

W-3 54 Lowe, C. S., McEwen, M., Mead, F. C., Jr. and Orban, E., "Research on Reactor Waste Disposal." AEC Doc. No. AECD-4066 (Dec. 1950); Nuclear Sci. Abs. 10, (16S) 6249 (1956)

HS Luckow, W. K., Mesler, R.B., and Widdoes, L. C., "The Nuclear Research Reactor at the University of Michigan. A conceptual Design of the Facility. An Evaluation of the Hazards of Operation and Provisions for Limiting These Hazards." Contract AT (11-1)-224, MMPP-75-1, 142 (Nov. 1953); Nuclear Sci. Abs. 9, 620 (July 1955)

B Lynch, D. E., "Soil and Water Uranium and Radium Survey." AEC Doc. No. NYO-1321 (June 1956); Nuclear Sci. Abs. 10, (5) 2248 (1956)

W-3 55 Lyon, W. S. and Reynolds, S. A., "Radioactive Species Induced in Reactor Cooling Water." Nucleonics 13, (10) 60 (1955); Pub. Health Eng. Abs. 36, 17 (1956)

EB MacDonald, N. S., Noyes, P. and Lorick, P. C., "The Discrimination of Calcium and Strontium by the Kidney." AEC Doc. No. UCLA-369 (May 1956); Nuclear Sci. Abs. 10, (15) 4518 (1956)

F Machta, L., List, R. J. and Hubert, L. F., "World-Wide Travel of Atomic Debris." Science 124, 474 (Sept. 1956); Nuclear Sci. Abs. 10, (22) 11396 (1956)

W-3 56 Manowitz, B. and Richman, D. M., "Economic Future of Fission Products for Radiation Power." Nucleonics 14, (6) 98 (June 1956); Nuclear Sci. Abs. 10, (16) 6459 (1956)

W-2 Manowitz, B. and Isler, R., "Progress Report on Waste Processing Development Project." AEC Doc. No. AECD-3777 (Dec. 1953); Nuclear Sci. Abs. 10, (5) 2252 (1956)

M Marei, A. M., "Aquatic Organisms as a Sanitary Index of Contamination of Water Reservoirs by Radioactive Substances." Giglena i Sanit. (Italy) 8, 3 (1955); Chem. Abs. 50, 2903 (1956)

H Marley, W. G., "The Hazards from the Increasing Use of Ionizing Radiations: A Symposium. I. The Control of Radiological Hazards in the Future Development of Atomic Energy." Brit. J. Radiol. 29, 261 (1956); Nuclear Sci. Abs. 10, (20) 9072 (1956)

M Martell, E. A., "The Chicago Sunshine Method; Absolute Assay of Strontium-90 in Biological Materials, Soils, Waters, and Air Filters." AEC Doc. No. AECU-3262 (May 1956); Nuclear Sci. Abs. 10 (19) 8164 (1956)

M Masao Kato, Kiyoaki Taketani and Setsuko Yoshikawa, "How to Determine the Radioactivity in a Solution." J. Electrochem. Soc. (Japan) 23, 438 (1955) Chem. Abs. 50, 10554d, (1956)

W-3 Mawson, C. A., "Report on Waste Disposal System at the Chalk River Plant of Atomic Energy of Canada." AEC Doc. No. CRB-658 (July 1956); Nuclear Sci. Abs. 10, (20) 9250 (1956)

W-5 57 Mawson, C. A., "Waste Disposal into the Ground." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 676 (1956)

EB Maynard, L. S. and Fink, S., "The Influence of Chelation on Radiomanganese Excretion in Man and Mouse." J. Clin. Invest. 35, 831 (Aug. 1956); Nuclear Sci. Abs. 10, (22) 11029 (1956)

W-3 Mayne, K.I., "The Storage of Fissile Material." J. Nuclear Energy 2, 77 (Dec. 1955); Nuclear Sci. Abs. 10, (15) 4663 (1956)

MS McCullough, C. R., Mills, M. M. and Tiller, E., "The Safety of Nuclear Reactors." Pub. Health Eng. Abs. 36, 20 (1956); Chem. Eng. Progr. 51, 446 (1955)

W-3 57a McDermott, G. N., "Liquid Wastes from Hafnium-Free Zirconium Production." AEC Doc. No. TID-7517 (Part 1a) 268 (1956)

EP McHenry, J. R., "Adsorption and Retention of Cesium by Soils of the Hanford Project." AEC Doc. No. HW-31011 (Mar. 1954); Nuclear Sci. Abs. 10, (14S) 4254 (1956)

EP McHenry, J. R., "Adsorption and Retention of Strontium by Soils of the Hanford Project." AEC Doc. No. HW-34499 (Feb. 1955); Nuclear Sci. Abs. 10, (9) 3183 (1956)

W-5 58 McHenry, J. R., Rhodes, D. W. and Rowe, P. P., "Chemical and Physical Reactors of Radioactive Liquid Wastes with Soils." AEC Doc. No. TID-7517 (Part 1a) 170 (1956)

H McLean, A. S. and Dunster, H. J., "Discussion on Health Hazards from Atomic Radiation." Royal Soc. of Health J. 76, 307 (July 1954); Pub. Health Eng. Abs. 36, (22) (1956)

W-2 59 McVay, T. N., Hamner, R. L. and Haydon, M. P., "Fixation of Radioactive Wastes in Clay-Flux Mixes." AEC Doc. No. TID-7517 (Part 1b) 335 (1956)

H Meadors, G. F., "Epidemiology of Lukemia." Pub. Health Rep. 71, 2:103 (1956) J.A.P.H.A. 46, 668 (1956)

MC Meinke, W. W., "Nucleonics, A Review of Fundamental Developments in Analysis from 1953 to Date." Anal. Chem. 28, 736 (1956)

EB Meisel, M. N., Remezova, T. S., Shalnova, M. N. and Alekseeva, V. M., "Characteristics of the Inactivation of Micro-organisms in Radiation Sterilization." AEC Doc. No. AEC-tr-2435 (Part 4) (July 1955); Nuclear Sci. Abs. 10, (14) 3975 (1956)

T Melcher, D., "Radioactive Infection of Foods." Mitt. Lebensm. Hyg. Bein. 46, 68 (1955); Pub. Health Eng. Abs. 36, 10 (1956)

MC Merriam, C. N., Jr. and Thomas, H. C., "Adsorption Studies on Clay Minerals. VI. Alkali Ions on Attapulgite." J. Chem. Phys. 24, 993 (May 1956); Nuclear Sci. Abs. 10, (19) 8302 (1956)

W-8 60 Meyer, D. D., "Demolition of an Alpha-Contaminated Building." AEC Doc. No. TID-7517 (Part 1a) 212 (1956)

EB Michihiko Yatazawa and Takashi Ishihara, "Radioactive Contamination of Plants in Japan Covered with Fallout from H-Bomb Detonations in March-May 1954 at Bikini Atoll, Marshall Islands. I. Distribution of Deposited Radioactivity." Soil and Plant Food 1, 21 (1955); Chem. Abs. 50, 9163f (1956)

EB Michihiko Yatazawa, "Radioactive Contamination of Plants in Japan Covered with Fall-Out from Hydrogen Bomb Detonations in March-May 1954 at Bikini Atoll, Marshall Islands. II. Radioactive Elements of Contaminated Plants." Soil and Plant Food 1, 23 (1955); Chem. Abs. 50, 16416f (1956)

B Miller, C. E. and Marinelli, L. D., "Gamma-Ray Activity of Contemporary Man." Science 124, 122 (July 1956); Nuclear Sci. Abs. 10, (22) 10998 (1956)

MC Milner, G. W. C. and Barnett, G. A., "The Determination of Zirconium in Fluoride-Containing Solutions." Anal. Chim. Acta. 14, 414 (1956)

FW Miyake, Y., "The Artificial Radioactivity in Rain Water Observed in Japan From May to August 1954." Papers in Meteorol. and Geophys. 5, 173 (Sept. 1954); Nuclear Sci. Abs. 10, (15) 4510 (1956)

W-4 Miyoshi, Hisashi; Hori, Sadakiyo; and Yoshida, Shozo, "Drift and Diffusion of Radiologically Contaminated Waters in the Ocean." Records of Oceanographic Works (Japan, Toyko) 2, 30 (Oct. 1955); Pub. Health Eng. Abs. 36, (11) 21 (1956)

T Moeller, D. W., Terrill, J. G., Jr. and Seal, M. S., "Radiometric Methods for Drinking Water Analysis." Peaceful Uses of Atomic Energy, 15, 49 (1956); Chem. Abs. 50, 13340 (1956)

MC Moore, F. L., "Separation of Zirconium from other Elements by Liquid-Liquid Extraction." Anal. Chem. 28, 997 (1956)

MPC Morgan, K. Z., "Tolerance Values for Thorium." AEC Doc. No. AECD-3808 (Nov. 1945); Nuclear Sci. Abs. 10, (5) 2244 (1956)

W-3 Morgan, G. W., "The Control of Radioisotopes." Modern Sanitation 7, 18 (Nov. 1955); Pub. Health Eng. Abs. 36, (3) 9 (1956)

W-8 61 Morgan, J. M., Jr., "Considerations in Evaluating a Burial Ground for Solid Wastes." AEC Doc. No. TID-7517 (Part 1a) 243 (1956)

MC Morris, D. F. C. and Scargill, D., "A Procedure for the Determination of Radioactivity Due to Fission Product Niobium." Anal. Chim. Acta. 14, 57 (Jan. 1956); Nuclear Sci. Abs. 10, (16) 5533 (1956)

T Morrison, G. H. and Cosgrove, J. F., "Activation Analysis of Trace Impurities in Germanium Using Scintillation Spectrometry." Anal. Chem. 28, 320 (1956)

W-6 Morton, J. R. and Straub, C. P., "Removal of Radionuclides from Water by Water Treatment Processes." J.A.W.W.A. 48, 545 (1956)

W-2 Morton, R. J. and Struxness, E. G.. "Ground Disposal of Radioactive Wastes." Am. J. Pub. Health 46, 156 (Feb. 1956); Nuclear Sci. Abs. 10, (18A)7611 (1956)

W-1 62 Motta, E. E., "High Temperature Fuel Processing Methods." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 596 (1956)

W-7 Moxham, R. M., Walker, G. W. and Baumgardner, L. H., "Geologic and Airborne Radioactivity Studies in the Rock Corral Area, San Bernardino County, California." U. S. Geol. Survey Bull, 1021-C, (1955); Nuclear Sci. Abs. 10, (1) 161 (1956)

W-3 National Research Committee, "Disposal and Dispersal of Radioactive Wastes." Science 123, 17 (1956)

W-1 63 Nicholls, C. M., "Criteria for the Selection of Separation Processes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 453 (1956)

EB Nishita, H., Kowalewsky, B. W. and Larson, K. H., "The Influence of Soil Organic Matter on the Uptake of Sr^{90} by Barley and Tomato Plants." AEC Doc. No. UCLA-349 (Oct. 17, 1955); Nuclear Sci. Abs. 10, (2) 554 (1956)

C Norwood, J. L., "A Study of the Effectiveness of Decontaminating Agents on Contaminated Protective Clothing." AEC Doc. No. HW-38218 (Rev.) (July 1955); Nuclear Sci. Abs. 10, (7) 3003 (1956)

EB Obo, Fujio, "Radioactive Rains and Fishes in the Kagoshima Area." Igaku to Seibutsugaku (Med. and Biol.) 33, 19 (1954); Chem. Abs. 50, 9888 c, (1956)

MI O'Connor, L. P., "Counting the Total α Activity of Granular Material at "Infinite Depth" Using an α Scintillation Counter Type 1093." AEC Doc. No. IGO-AM/W-37 (Apr. 1956); Nuclear Sci. Abs. 10,(15) 4787 (1956)

MI Okita, G. T., Spratt, J. and Leroy, G. V., "Liquid-Scintillation Counting for Assay of Tritium in Urine." Nucleonics 14, (3) 76 (Mar. 1956); Nuclear Sci. Abs. 10, (16) 5844 (1956)

W-3 Oleson, F. B., "Estimation of Curie Content of Packaged Radioactive Wastes." Arch. Ind. Health 12, 383 (Oct. 1955); Nuclear Sci. Abs. 10, (2) 755 (1956)

M Oleson, F. B., "Estimation of Curie Content of Packaged Radioactive Wastes." Ind. Health 12, 383 (Oct. 1955)

MC Onstott, E. I. and Ellis, W. P., "Radiometric Determination of Inorganic Fluoride." Anal. Chem. 28, 393 (Mar. 1956); Nuclear Sci. Abs. 10, (16) 5536 (1956)

W-5 64 Orcutt, R. G., Naor, I., Klein, G. and Kaufman, W. J., "Hydraulic and Ion Exchange Phenomena in the Underground Movement of Radiostrontium." AEC Doc. No. TID-7517 (Part 1a) 191 (1956)

MI Owen, R. B., "The Measurement of Radioactivity in the Human Body by NaI-Tl Scintillation Counters." AEC Doc. No. AEPE-EL/R-1851 (Feb. 1956); Nuclear Sci. Abs. 10, (16) 5818 (1956)

EB Pace, F. C., "Effects of Atomic Bomb Radiation on Human Food." Canadian J. Pub. Health 47, 4, 133 (1956)

EB Parker, H. M., "Radiological Sciences Department Research and Development Activities Quarterly Progress Report (For) October-December 1954)." AEC Doc. No. AECD-3817 (Jan. 1955); Nuclear Sci. Abs. 10, (5S) 2242 (1956)

MI Passmann, J. M., Radin, N. S. and Cooper, J. A. D., "Liquid Scintillation Technique for Measuring Carbon-14-Dioxide Activity." Anal. Chem. 28, 484 (1956)

W-2 65 Patrick, W. A., "Use of Artificial Clays in Removal and Fixation of Radioactive Nuclides." AEC Doc. No. TID-7517 (Part 1b) 368 (1956)

MC Perkins, R. W. and Kalkwarf, D. R., "Determination of Thorium in Urine." Anal. Chem. 28, 1989 (1956)

M Perry, K. E. G., "The Rapid Detection and Continuous Monitoring of Radioactive Contamination on Dust in Laboratory Air." AEC Doc. No. AERE-EL/R-1755 (Sept. 1955); Nuclear Sci. Abs. 10, (15) 4779 (1956)

W-1 66 Pratt, H. R. C., "The Characteristics of Liquid-Liquid Extraction Equipment as Applied to Radioactive Processing." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 520 (1956)

T Price, E. R., "Atomic Energy Commission Civilian Application Program." AEC Doc. No. TID-7517 (Part 1b) 527 (1956)

T Putnam, J. L. and Jefferson, S., "Application of Radioisotopes to Leakage and Hydraulic Problems." Peaceful Uses of Atomic Energy, Vol. 15, 147 (1956)

T Putman, J. L. and Smith, D. B., "Radioactive Tracer Techniques for Sand and Silt Movements Under Water." Intern. J. Appl. Radiation and Isotopes 1, 24 (July 1956); Nuclear Sci. Abs. 10, (22) 11194 (1956)

MB Ray, R. D., Thomson, D. M., Wolff, I. K. and LaViolette, D., "Bone Metabolism. II. Toxicity and Metabolism of Radioactive Strontium (Sr^{90}) in Rats." J. Bone and Joint Surg. 38A, 160 (Jan. 1956); Nuclear Sci. Abs. 10, 18A, 7413 (1956)

MI Reed, G. W., Jr., "Absolute Beta Assay with End-Window Geiger Mueller Counters." AEC Doc. No. ANL-5608 (1956)

W-1 67 Reid, R. C., Duffey, D. and Vivian, J. E., "Pyroprocessing for Nuclear Fuels." Nucleonics 14, (2) 22 (1956)

B Reiter, R., "Fluctuations of Natural Radioactivity of the Air: Measurement at 2600 m Above Sea Level in the Northern Alps." Z. Naturforsch. 11a, 411 (May 1956); Nuclear Sci. Abs. 10, (21) 10383 (1956)

W-3 Reinhart, G. M. and Glass, D. W., "Uranium Refinery Waste Clarification." Chem. Eng. Progr. 52 (9) 360 (1956)

W-4 69 Renn, E. C., "Ultimate Disposal of Radioactive Reactor Wastes in the Oceans." J.A.W.W.A. 48, 535 (1956); Also, AEC Doc. No. TID-7517 (Part 1a) 53 (1956)

W-4 68 Renn, C. E., "Disposal of Radioactive Wastes at Sea." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 718 (1956)

MC Reynolds, S. A., Lyon, W. S. and Wyatt, E. I., "Radioisotope Assay Methods at Oak Ridge National Laboratory." AEC Doc. No. CF-56-1-130 (Jan. 1956) Nuclear Sci. Abs. 10, (10) 3266 (1956)

EB Rhoads, W. A., Romney, E. M. and Wallace, A., "Plant Uptake of Fe59-Tagged Iron From A Slowly Soluble Source." AEC Doc. No. UCLA-350 (Oct. 1955); Nuclear Sci. Abs. 10, (2) 555 (1956)

EB Ridenour, M. G. and Armbruster, H. E., "Effect of High-Level Gamma Radiation on Disinfection of Water and Sewage." J.A.W.W.A. 48, 671 (1956)

T Rieck, H. G., "Natural Tritium as a Tracer for Underground Water Movement-- A Feasibility Report." AEC Doc. No. HW-30262 (Nov. 1953); Nuclear Sci. Abs. 10, (17S) 7363 (1956)

MI Rieck, H. G., Jr. and McCormack, J. D., "Automation in the Beta Monitoring of Liquid Waste Streams." AEC Doc. No. HW-40460 (Dec. 1955); Nuclear Sci. Abs. 10, (8) 3125 (1956)

MC Rieck, H. G., Meyers, I. T. and Palmer, R. F., "A Tritiated Water Standard." Radiation Research 4, 451 (1956)

T Rigler, F. H., "Tracer Study of the Phosphorous Cycle in Lake Water." Ecology 37, 550 (1956); Chem. Abs. 50, 17262e (1956)

W-3 70 Rimshaw, S. J., "Decontamination of Fission Products Wastes with Separation of Kilocurie Quantities of Cesium, Strontium, Rare Earths, and Ruthenium." AEC Doc. No. TID-7517 (Part 1a) 303 (1956)

MC Roberts, H. R. and Carleton, F. J., "Determination of Specific Activity of Carbon-14-Labeled Sugars on Paper Chromatograms Using Automatic Scanning Device." Anal. Chem. 28, 11 (1956)

W-1 71 Rodger, W. A., "Trends in Separation Process Development and Their Effects Upon Waste Handling." AEC Doc. No. TID-7517 (Part 1a) 97

W-8 72 Rodger, W. A. and Hampson, D. C., "Operating Characteristics and Economics of a 100 ft^3/Day Incinerator for Radioactive Wastes." Jour. Air Poll. Control. Assoc. 6, 41 (May 1956); Pub. Health Eng. Abs. 36, (10) 7 (1956)

W-1 Rohrman, C. A., "Process Engineering at the Hanford Separation Plants." Nucleonics 14, (6) 66 (1956)

EB Romney, E. M., Alexander, G. V. and LeRoy, G. M., "Effects of Calcium and Strontium on Plant Uptake of Sr^{89} and Stable Strontium from Nutrient Solutions and Soils." AEC Doc. No. UCLA-374 (July 1956); Nuclear Sci. Abs. 10, (18A) 7448 (1956)

EB Rosenthal, H. L., "Uptake and Turnover of Ca-45 by the Guppy." Science 124, 571 (1956)

W-3 73 Rostenbach, R. E., "Radioactivity Levels of the Columbia River below Richland Washington for the Period July, August, September 1955." AEC Doc. No. HW-42181 (Mar. 1956); Nuclear Sci. Abs. 10, (14) 3979 (1956)

W-3 74 Rostenbach, R. E., "Radioactive Waste Disposal at Hanford." This Journal 28, 280 (1956)

W-3 Rostenbach, R. E., "Radioactivity Levels of the Columbia River below Richland, Washington for the Period October, November, December 1955." AEC Doc. No. HW-42946 (May 1956); Nuclear Sci. Abs. 10, (17) 6491 (1956)

M Ruby, L., "Improved Fallout Meter Using CdS." Nucleonics 14, No. 5, 101 (May 1956); Nuclear Sci. Abs. 10, (20) 9491 (1956)

M Russell, E. R. and Brown, C., "The Quantitative Determination of Plutonium in Biological Materials. Part II. Analysis of Stools." AEC Doc. No. AECD-4070 (June 1946); Nuclear Sci. Abs. 10, (15S) 5081 (1956)

EB Russel, R. S., Squire, H. M. and Martin, P. P., "The Effects of Operation Hurricane on Plants and Soils." AEC Doc. No. AERE-SPAR-3 (July 1955); Nuclear Sci. Abs. 10, (16) 5474 (1956)

W-8 75 Ryan, E. S. and Farrell, L. C., "Costs Involved in the Off-Site Disposal of Solid Wastes." AEC Doc. No. TID-7517 (Part 1a) 236 (1956)

LC Sachs, M. and Sullivan, R., "Radiological Health or Radiation Protection." Am. Jour. Pub. Health 46, 575 (1956)

R Sadowski, G. S., "The Organization, Administration, and Operation of a Radiochemical Pilot Plant." AEC Doc. No. ORNL-2132 (Oct. 1956); Nuclear Sci. Abs. 10, (23) 11780 (1956)

MC Salyer, D. and Sweet, T. R., "Determination of Cobalt by Anodic Electro-Deposition. Utilization of Isotope Dilution Method. Anal. Chem. 28, 61 (1956)

M Sanders, S. M., Jr., "Determination of Plutonium in Urine." AEC Doc. No. DP-146 (Mar. 1956); Nuclear Sci. Abs. 10, (14) 4012 (1956)

MI Sawle, D. R., "A Continuous Alpha Air Monitor Compensating for the Natural Atmospheric Radioactivity." AEC Doc. No. UCRL-4556 (Aug. 1955); Pub. Health Eng. Abs. 36, 9 (1956)

MC Schmeling, P., "Half-Life of Y-90." Z. Naturforsh 10a, 79 (1955); Chem. Abs. 50, 10556e (1956)

M Schmidt, R. W., "What the South District Filtration Plant is Doing to Detect Radioactivity in Our Water Supply." Pure Water 7, 9, (1955); Pub. Health Eng. Abs. 36, 23 (1956)

W-376 Schulz, W. W. and McKenzie, T. R., "The Removal of Cesium and Strontium from Radioactive Waste Solutions." AEC Doc. No. TID-7517 (Part 1a) 290 (1956)

W-377 Seal, M. S. and Pecsok, D. A., "Preliminary Laboratory Evaluation of an Electrodialytic Method for Treatment of Radioactive Waters." AEC Doc. No. ORNL-55-5-171 (May 1955); Pub. Health Eng. Abs. 36, (10) 25 (1956)

T Seaman, W., "Settling Basin Detention Time by Radiotracer." This Journal 28, 296 (1956)

FW Sedlet, J., "Environmental Radioactivity at Argonne National Laboratory." AEC Doc. No. ANL-5446 (Dec. 1955); Nuclear Sci. Abs. 10,(5) 1992 (1956).

EB Selders, A. A., "The Absorption and Translocation of Several Fission Elements by Russian Thistles." AEC Doc. No. HW-18034 (June 1950); Nuclear Sci. Abs. 10, (14S) 4118 (1956)

EB Selders, A. A., Cline, J. F. and Rediske, J. H., "The Absorption by Plants of Beta-Emitting Fission Products from the Bravo Soil." AEC Doc. No. HW-40289 (Dec. 1955); Nuclear Sci. Abs. 10,(20) 9102 (1956)

W-478 Seligman, H., "The Discharge of Radioactive Waste Products into the Irish Sea. Part 1. First Experiments for the Study of Movement and Dilution of Released Dye in the Sea." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 701 (1956)

FW Setter, L. R. and Goldin, A. S., "Radioactive Fallout in Surface Waters." Ind. Eng. Chem. 48, 251 (Feb. 1956); Nuclear Sci. Abs. 10, (15) 4509 (1956)

M Setter, L. R. and Goldin, A. S., "Measurement of Low Level Radioactivity in Water." J.A.W.W.A. 48, 1373 (1956)

H Shapiro, J., "Radiation Dosage from Breathing Radon and its Daughter Products." Arch. Ind. Health 14, 169 (Aug. 1956); Nuclear Sci. Abs. 10, (23) 11665 (1956)

B Shapiro, J., "Studies on the Radioactive Aerosol Produced by Radon in Air." AEC Doc. No. UR-461 (Aug. 1956); Nuclear Sci. Abs. 10, (22) 11253 (1956)

T Shaw, E. N., "Radio-Isotope Production in Britain." Nuclear Eng. 1, 31 (Apr. 1956); Nuclear Sci. Abs. 10, (19) 8520 (1956)

T Shumilovskii, N. N. and Mel'ttser, L. V., "Use of Radioactive Isotopes for Measuring Gas Flow Velocities and for the Automatic Control of Gas Flow by 'Labeled Molecules'". Doklady Akad. Nauk S.S.S.R. 106, 661 (Feb. 1956); Nuclear Sci. Abs. 10, 18A, 7632 (1956)

F Sievert, R. M., "Records of Gamma Radiation from the Ground and Beta Radiation from Radioactive Debris in Sweden, 1950-1955. Part I." Tellus (J. Geophysics) 8, 117 (1956); Pub. Health Eng. Abs. 36, 15 (1956)

MC Silker, W. B., "Radiochemical Determination of Phosphorus-32." Anal. Chem. 28, 1782 (1956)

W-7 79 Silverman, L., "Air and Gas Cleaning for Nuclear Energy Processes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 727 (1956)

W-8 80 Silverman, L. B. and Dickey, R. K., "Reduction of Combustible, Low-Level Contaminated Wastes by Incineration." AEC Doc. No. UCLA-368 (May 1956); Nuclear Sci. Abs. 10, (14) 3997 (1956)

W-7 Silverman, L., "Air and Gas Cleaning for Nuclear Energy Processes." Arch. Ind. Health 14, 32 (1956); Pub. Health Eng. Abs. 36, (10) 14 (1956)

EB Sipe, C. R., Schork, P. K., Strome, C. P. A. and Gibbs, W. H., "Emergency Laboratory Organization for the Care of Large Numbers of Human Beings Accidentally Exposed to Ionizing Radiation." AEC Doc. No. NM-006.012.04.91 (Nov. 1955); Nuclear Sci. Abs. 10, (16) 5476 (1956)

F Sittkus, A., "Observations of Radioactive Swathes from Atomic Experiment in 1953/54." Naturwissenschaften 42, 478 (1955); Pub. Health Eng. Abs. 36, (7) 11 (1956)

F Sittkus, A., "Observations of Radioactive Vapors from Atomic Experiments in the Year 1953/54." Naturwissenschaften 42, 478 (1955); Water Pollution Abs. 29, 38 (1956)

M Smales, A. A., Airey, L., Walton, G. N. and Brooks, R. O. R., "The Determination of Plutonium in Urine." AEC Doc. No. AERE-C/R-533 (May 1950); Nuclear Sci. Abs. 10, (15) 4531 (1956)

MI Smith, C. C., Seliger, H. H. and Steyn, J., "Efficiency of 4π Crystal-Scintillation Counter." J. Res. Nat'l. B. S. 57, 5, 251 (1956)

MC Smith, R. R., Passell, T. O. and Reeder, S. D., "Radiochemical Analyses for Fe, Cr, Ni, and Co Corrosion Products." AEC Doc. No. AECD-3889 (Sept. 1955) Nuclear Sci. Abs. 10, (15) 5107 (1956)

W-7 81 Smith, M. E., "The Variation of Effluent Concentrations from an Elevated Point Source." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 736 (1956)

W-6 82 Straub, C. P., "Criteria for Waste Disposal." Ohio State Univ. Health Physics Conference (Columbus, Ohio) June 13-15, 1955

W-3 Straub, C. P., "Problems of Radioactive Waste Disposal." This Journal 28, 787 (1956)

W-6 Straub, C. P., Lacy, W. J. and Morton, R. J., "Methods for Decontamination of Low-Level Radioactive Liquid Wastes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 24 (1956)

W-5 83 Struxness, E. G., Morton, R. J. and Straub, C. P., "Disposal of High Level Radioactive Liquid Wastes in Terrestrial Pits." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 684 (1956)

MC Strzemienski, K. and Williams, R. M., "Total and Radioactive Phosphorus Determination in Small Plant Samples Using the Gravimetric Method of Lorenz." Jour. Sci. and Tech. (New Zealand) 37, 243 (1955); Pub. Health Eng. Abs. 36, (4) 16 (1956)

MC Swift, E. H. and Butler, E. A., "Precipitation of Sulfides from Homogeneous Solutions by Thioacetamide." Anal. Chem. 28, 146 (1956)

MC Taimni, I. K. and Salaria, G. B. S., "Insoluble Substances in Quantitative Analysis." Anal. Chim. Acta. 14, 4 (1956)

M Tait, G. W. C., "Determining Concentration of Airborne Plutonium Dust." Nucleonics 14, (1) 53 (1956)

MI Tait, G. W. C., "The Annular Impactor." AEC Doc. No. AECL-130 (June 1955) Nuclear Sci. Abs. 9, 842 (1955)

F Tajima, E. and Doke, T., "Airborne Radioactivity." Science 123, 211 (Feb. 1956); Nuclear Sci. Abs. 10, (15) 4511 (1956)

EB Takase, A. and Yamada, K., "Distribution of Radioactivity in Various Tissues of Fish and Group Separation of Radioactive Elements in Them." Inst. Pub. Health Bull. (Japan) 4, 27 (1955); Pub. Health Eng. Abs. 36, (1) 19 (1956)

LC Taylor, L. S., "Legislative Control of Radiation." Radiology 66, 246 (Feb. 1956); Nuclear Sci. Abs. 10, (16) 5477 (1956)

US Terrill, J. G., Jr., "The Technical and Administrative Aspects of the Environmental Health Problem as Related to the Public Health Service." AEC Doc. No. TID-7517 (Part 1b) 517 (1956)

W-4 84 Theis, C. V., "Problems of Ground Disposal of Nuclear Wastes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 679 (1956)

W-5 85 Theis, C. V., "A Review of the Ground-Water Geology of the Major-Producing Sites." AEC Doc. No. TID-7517 (Part 1a) 116 (1956)

W-2 86 Thomas, R. G., Rex, E. H. and Christenson, C. W., "Studies on Fixation of Radioactivity in Fired Clays." AEC Doc. No. TID-7517 (Part 1b) 352 (1956)

T Thomas, H. A., Jr., "Radioactive Isotopes as Tools in Sanitary Engineering Research." Int. Conf. on Peaceful Uses of Atomic Energy, Vol. 15, 42 (1956)

FW Thomas, H. A., "Public Health Implications of Radioactive Fallout in Water Supplies." Am. J. Public Health 46, 1266 (1956); Chem. Abs. 50, 17261b (1956)

W-6 Thomas, H. A., "Disposal of Low-Level Liquid Radioactive Wastes in Inland Waterways." AEC Doc. No. TID-7517 (Part 1b) 457 (1956)

W-6 Thomas, I. E. and Bell, C. G., Jr., "Preliminary Studies on the Fate of Fission Products in the Illinois River Systems." AEC Doc. No. TID-7517 (Part 1b) 471 (1956)

W-5 87 Thurston, W. R., "Summary of Princeton Conference on Disposal of High Level Radioactive Waste Products in Geologic Structures." AEC Doc. No. TID-7517 (Part 1a) 47 (1956)

W-3 Titterton, E. W., "Nuclear Power Stations and Waste Disposal." Atomic 7, (11) 394 (1956)

W-1 88 Tomlinson, R. E., "Practical Limits of Solvent Extraction Processes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 511 (1956)

T Tsivoglou, E. C., Pecsok, D. A. and Valentine, R. F., "Field Use of Radiotracer in Sewage Oxidation Pond Flow Study." This Journal 28, 1211 (1956)

MI Turekian, K. K. and Kulp, J. L., "Strontium Content of Human Bones." Science 124, 495 (Aug. 1956)

IB Van Middlesworth, L., "Radioactivity of Thyroid Glands Following Nuclear Weapons Tests." Science 123, 982 (1956)

W-1 89 Voigt, A. F., "The Purification of Uranium Reactor Fuel by Liquid-Metal Extraction." Int. Conf. on the Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 591 (1956)

W-3 Watson, C. D., "A General Decontamination Manual for the Idaho Chemical Processing Plant." AEC Doc. No. IDO-26081 (Mar. 1953); Nuclear Sci. Abs. 10, (15S) 5143 (1956)

W-3 Walker, W. H., "Fission Product Accumulation." AEC Doc. No. CRRP-634 (Mar. 1956); Nuclear Sci. Abs. 10, (19) 8658 (1956)

MI Weinberger, A. J., Davidson, J. B. and Ropp, G. A., "Liquid Scintillation Counter for Carbon-14 Employing Automatic Sample Alternation (ORNL)." Anal. Chem. 28, 110 (1956)

FW Wexler, H., "Meteorological Aspects of Atomic Radiation." Science 124, 105 (July 1956); Nuclear Sci. Abs. 10, (22) 10997 (1956)

W-3 White, G., Jr. and Lamb. W. P., "Recommendations for the Storage of Radium Cake." AEC Doc. No. AECD-3793 (May 1949); Nuclear Sci. Abs. 10, (5), 2253 (1956).

F White, M. R. and Dobson, E. L., "California Cattle Thyroid Activity Associated with Fallout." AEC Doc. No. UCRL-3355 (Mar. 1956); Nuclear Sci. Abs. 10, (13) 3899 (1956)

LC Whitney, J. M., "National Medical Civil Defense Planning and Requirements." J.A.M.A. 160, 14:1195 (1956)

C Widdoes, L. C., "Decontamination and Waste Disposal in Indium Gamma Irradiation Facility." AEC Doc. No. AECU-3339 (May 1956); Nuclear Sci. Abs. 10, (1) 225 (1956)

F Wilkening, M. H., "Variation of Natural Radioactivity in the Atmosphere with Altitude." Trans. Am. Geophys. Union 37, 177 (1956); Chem. Abs. 50, 9866i (July 1956)

W-5 90 Wilkowski, E. J., "Operating Experience in the Disposal of Radioactive Wastes in Open Pits." AEC Doc. No. TID-7517 (Part 1a) 105 (1956)

W-1 91 Wolman, A. and Gorman, A. E., "The Management and Disposal of Radioactive Wastes." Int. Conf. on Peaceful Uses of Atomic Energy, Geneva, Switzerland 9, 9 (1956)

W-3 92 Wolman, A., Gorman, A. E. and Lieberman, J. A., "Disposal of Radioactive Wastes in the U.S. Atomic Energy Program." AEC Doc. No. WASH-408 (1956)

W-4 93 Wright, J., "The Dispersal of Effluent in the Sea." Atomics 7, (8) 274 (Aug. 1956); Nuclear Sci. Abs. 10, (21) 10126 (1956)

F Yamatera, H., et al., "On the Radioactive Dust Collected from the No. 5 Fukuryu Maru." AEC Doc. No. AEC-tr-2104, Trans. from Japan Anal. 3, 346 (1956); Nuclear Sci. Abs. 10, (20) 9149 (1956)

MI Yoshikawa, H. H. and Swartz, G. A., "Electrostatic Particle Size Analyzer." Rev. Sci. Instr. 27, 359 (June 1956); Nuclear Sci. Abs. 10, (22) 11254 (1956)

C Yoshio Yamado, Mitsuyoshi Hasegawa and Tadayuki Kihara, "Measurement of Radioactivity in Contaminated Crops I." Soil and Plant Food 1, 25 (1956) Chem. Abs. 50, 9163h (1956)

W-3 94 Zeitlin, H. R., "Economic Requirements for Radioactive Waste Disposal in a Nuclear Power Economy." AEC Doc. No. CF-55-6-152 (June 1955); Nuclear Sci. Abs. 10, (23) 11778 (1956)